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BEVERAGE CONTAINERS IN MARYLAND

REPORT OF ELEVEN MEMBERS OF THE
GOVERNOR'S TASK FORCE TO STUDY LEGISLATION
INVOLVING MANDATORY DEPOSITS ON BEVERAGE CONTAINERS

Pursuant to HJR 30

Compiled by: Jean Hopkins, Editor

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Issued: March, 1977

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INTRODUCTION

On May 17, 1976, Governor Marvin Mandel approved House Joint Resolution 30 which requested the Governor to appoint a Task Force to study mandatory deposit legislation on beverage containers in Maryland. Twenty-two members were appointed to this Task Force--eleven from citizen and environmental organizations and eleven from industry and labor.

The Resolution was adopted in response to mandatory deposit legislation having been introduced each year in the Maryland Legislature since the early 1970's. The Task Force was to study the "general impact of mandatory deposit legislation on the State" before the legislature spends further time considering such legislation. The Task Force was directed to submit a report to the General Assembly by January 1, 1977.

Although the Task Force has met monthly since September, there appears no likelihood of a report being issued until May, 1977, at the earliest, which is after the current legislative session and five months past the required reporting date. To comply with the intent of the Resolution and to prevent further delay in consideration and passage of mandatory deposit legislation, this report on the effects of mandatory deposit legislation on beverage containers in Maryland is submitted to the General Assembly of Maryland by the eleven members of the Task Force appointed from the environmental and civic organizations.

This report is based on hearings held by the Task Force and independent research by the authors. There have been two other reports issued in

Maryland on this subject: The "Scheinman Report" issued in December, 1974, and revised in March, 1975, for the Council of Economic Advisors; and the "Tawil Report" issued in March, 1976, by the Maryland Department of Economic and Community Development. These reports have been studied extensively by the Task Force and they are often cited in this report. There are also numerous other published studies of mandatory deposit legislation compiled by Federal, State, and private sources. In addition, empirical data has been assembled in many publications on the effects of mandatory deposit legislation in Oregon and Vermont, the two states which presently have mandatory deposit systems for beverage containers in effect. These data have also been closely scrutinized.

The report is divided into nine main sections: Litter; Solid Waste Management; Beverage Prices and Sales; Consumer Convenience; Employment; Economic Impact and Beverage Industry and Government; Energy; Natural Resources; and Health. It is hoped that this report will be a useful tool to the Maryland Legislature in studying and analyzing mandatory deposit legislation for beverage containers. As the appendix to this report indicates, five other states have such legislation and four political subdivisions in Maryland have enacted or endorsed mandatory deposit legislation.

CHAPTER I: LITTER

"There is enough litter generated during one long holiday weekend in the U.S. to fill a line of trash trucks 43 miles long, or cover a four lane highway all the way from Boston to Detroit."¹

A. Introduction

A pundit once observed, after his travels through the United States, that our affluence can indeed be measured by our effluence. Litter, being the most visible component of our effluence has consequently the greatest impact on the aesthetics of our environment. It was litter and its visual impact that first spurred legislators and citizens to act against an ever increasing component of litter, the non-refillable beverage container.

This section will discuss the beverage container only as it relates to the litter problem. A definition of litter will be given and this definition will be used in the measurement of litter. Litter generation rates and litter composition will be investigated to show where the problem lies. The impact of litter on our everyday lives and the costs of litter will then be discussed. Finally, the effect of existing beverage container legislation on litter will be evaluated. While both the states of Oregon and Vermont will be used as bases of comparison, it should be noted that Oregon has the oldest container law and has experienced the smoothest transition in complying with its present law.

B. Definition of Litter

Webster's Unabridged Dictionary defines litter as: "things lying about in disorder; rubbish". This definition is very general and in-

cludes such items as grass litter from freshly cut road shoulders as well as the fallen leaves of a colorful Maryland autumn. Clearly, this is not what the concerned citizen has in mind when he thinks of roadside litter. He instead thinks of visible man-made items that are alien to their environment, generally items without sufficient economic value for their retention.

Litter, as defined by Webster's, has dimensionality, weight, visibility, harmfulness, and ability to decompose. Rapidly decomposing items will not accumulate and thus will only fit the description of litter for a short time. Non-decomposing items with visual impact because of their dimension and color remain litter until properly disposed of. Metal, glass, and plastic items fall into this latter category. Metal and glass items, furthermore, have the potential for inflicting injury.

A working definition of litter might then be: "man-made, non-decomposing items randomly distributed, having an unpleasant visual impact and the potential for harm."

C. The Measurement of Litter

Although the measurement of litter may seem simple, it has not been so in pre and post beverage container law implementation litter surveys. The controversy usually is whether litter surveys should use item count or volume to establish litter composition ratios. Discarded pull tabs or a broken bottle, for example, would have a large piece count but a small volume, whereas an uncrushed can would have a large volume but a small piece count.

A study performed by the Midwest Research Institute indicates that the public perception of litter depends more on the volume than on the number of items.² Since litter is foremost a problem of aesthetic

pollution, volume measurements of litter have generally been accepted as the measure for establishing litter composition ratios.

D. Litter Generation Rates and Litter Composition

Some of the questions concerning litter are:

How much of litter is due to beverage containers?
How many beverage containers are littered per mile in one month?
How likely are refillable containers to be littered compared to non-refillable containers?

These questions can all be answered by conducting a thorough litter survey in the jurisdiction of interest. Many factors influence the results, however, and some will be discussed below.

A survey conducted by the State of Maryland Highway Department in September and October of 1974 covered six miles in each of the seven highway districts of the State.³ The survey determined that 44 percent of the total litter by volume was beverage container litter (Table I-1). This result is similar to litter surveys in Oregon and Vermont. It should be noted, however, that the litter collected was generated during a one month interval. Most roadsides are not cleaned once per month and more of the decomposable part of litter would have disappeared if longer time intervals had been used. A litter survey conducted in Howard County in 1971 showed that the beverage container component of litter on roads not often cleaned was 76 percent by volume.⁴

The beverage container litter generation rate for Maryland was found to be 511 containers per mile in a one month period.⁵ This is seven times greater than the litter generation rate in Oregon prior to deposit legislation and is explained by Maryland's greater population density per road mile.⁶ Of the containers littered, 69 percent were cans and only 2.5 percent were refillable bottles. An analysis of the beverage

container sales mix and litter mix in Maryland (Table I-1) shows that a can is four times and all non-refillables 2.5 times as likely to be littered than a refillable bottle. In Maryland, 16 percent of all beverage containers sold show up as litter.⁷

E. Impact and Cost of Litter

Litter impacts our life in several ways. Most citizen's aesthetic senses are offended in their daily encounter with litter and their choice of shopping and vacation areas are undoubtedly affected to some degree by the presence or absence of litter. Thus, business and tourism can suffer as a result of litter. These costs are hard to assess but must exceed the cost of litter cleanup or else we would let litter accumulate. Nationally, the cost range for litter cleanup is 1-8 cents per container collected⁸ and in Maryland it exceeds 5 cents per container picked up as litter. (The recycle value of an aluminum can, the most valuable container in terms of recycling, is only 0.6 cents.) If the cost of litter disposal, capital costs of equipment, and disutility of litter are included, the complete cost of container litter collection and disposal in Maryland is estimated at 2.68 cents per beverage container sold.⁹

Examples of other costs of litter are medical costs incurred by injuries suffered from broken glass and the metal pull tabs of beverage cans. Medical and material damage costs result from accidents due to flat bicycle or wheelchair tires. Containers thrown from moving vehicles can likewise cause material damage and personal injury. Agricultural damage from container debris can result in external or internal injuries to animals. Most of these costs are hard to assess but nevertheless are real.

To summarize, the cost of litter in the State of Maryland is estimated to be in excess of 2.68 cents per container sold¹⁰ or about \$48 million annually.

F. Effect of Beverage Container Legislation on Litter

Beverage container legislation is either mandatory deposit legislation or tax legislation. Requiring a refundable deposit to be charged on each beverage container sold places a value on each container and thus provides an incentive for its return. Tax legislation only attempts to raise revenue for litter clean up and provides no incentive to reduce littering. In addition, such tax legislation places the financial burden for litter clean up on the beverage container population as a whole, rather than directly on litterers.

Litter laws, pertaining to all litter, are passed to act as a deterrent but seem to have little effect on littering rates. In Maryland two laws exist pertaining to litter: Article 27, Section 468, and Article 66-1/2, Section 11-1117(d) of the Annotated Code of Maryland. The first law makes it unlawful to litter any public or private property or any waters, whereas the second law refers to highways, bridges and public waters. Both offenses are misdemeanors with maximum fines of \$250 and \$1000 respectively. Littering laws have been largely ineffective as it is hard to apprehend and convict litterers with the limited budgets of most law-enforcement agencies.

A fourth, non-legislative method of litter control that is often emphasized by the beverage and beverage container industry is educational programs. The industry controls Keep America Beautiful (KAB) which is the industry's educational arm for litter control. KAB has been in existence for over 20 years, spends \$40 million annually on advertising,

and has failed to eliminate litter just as education and public service commercials have failed to stop smoking.¹¹ In contrast, mandatory deposit laws have reduced litter significantly in a short time.

In 1976, two states had implemented mandatory deposit legislation, Oregon in October 1972 and Vermont in September 1973. By July, 1974, Oregon had witnessed a 74 percent reduction in littered beverage containers.¹² Vermont had witnessed a 67 percent reduction in littered beverage containers within one year and, of those beverage containers littered, 80 percent were purchased out of state and thus not redeemable for deposit.¹³ It should be noted, however, that a depressed tourist season in Vermont during the winter of 1973-74 may partially explain the reduction of litter in that state.¹⁴ In Oregon, the probability of a non-refillable container being littered increased from 2.5 to 8.9 over the probability of a refillable container being littered.¹⁵ This, of course, proves that the value placed on a beverage container is a positive incentive for its return and, as litter, an incentive for picking it up. This is the main reason why mandatory deposit legislation is the most effective single method of reducing the beverage container component of litter.

G. Summary

In Maryland, as in most other States, beverage containers form the largest component of litter by volume. Of beverage containers sold in Maryland, 94 percent are non-refillable and 16 percent of these containers end up as litter (see Table I-1). Beverage container litter, representing 44 percent of the total volume for all litter, is responsible for personal injury, material damage, and business and agriculture losses. The cost of beverage container litter is estimated at 2.86 cents per container sold, or \$48 million annually. A 70 percent reduction in the beverage

container component of litter will decrease the cost of litter by \$14.8 million for the state of Maryland.¹⁶ The most effective way of reducing the container component of litter is by placing sufficient value on the container to provide an incentive for its return. Mandatory deposit legislation achieves this and has been shown to be very effective in reducing beverage container litter in Oregon and Vermont.

Table I-1
LITTER RELATED STATISTICS

Parameter	Maryland	Oregon		U.S.
1. Container Sales Mix In:	<u>1976⁽¹⁷⁾</u>	<u>1972</u>	<u>1973⁽¹⁸⁾</u>	<u>1972⁽¹⁹⁾</u>
Refillable bottles	6 %	43 %	93.3%	25%
Non-refillable bottles	42 %	17 %	0.3%	35%
Cans	52 %	40 %	6.4%	40%
2. Container Litter Mix In:	<u>1974⁽²⁰⁾</u>	<u>1971</u>	<u>1972⁽²¹⁾</u>	<u>1971⁽²²⁾</u>
Refillable bottles	2.5 %	11 %	23 %	10%
Non-refillable bottles	28.8 %			14%
Cans	68.7 %	89 %	77 %	75%
3. Container Litter In:	<u>1974</u>	<u>1971</u>		<u>1972</u>
% of total volume ⁽²³⁾	44 %	41 %		28%
4. Containers Littered In:	<u>1974</u>	<u>Nov. 1972</u>	<u>July 1974</u>	
Containers/mile-month	511 %	68 %	18 %	
5. Likelihood of Littering				
Non-refillable vs. refillable	2.44%	3.21%	8.9%	

CHAPTER I

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CHAPTER II: SOLID WASTE MANAGEMENT

A. The Problem

One of the most pressing problems currently facing Baltimore City and the more urbanized counties in the Baltimore-Washington metropolitan area is solid waste disposal. The solid waste problem is not unique to Maryland but is a nationwide problem and has been referred to as the "third pollution".

In 1974, 12,600 tons per day of solid waste were generated in Maryland.¹ It was estimated that in Maryland new facilities must be found by 1984 to dispose of over 11,000 tons of municipal solid waste per day and, of this amount, new facilities must be found for over 6,000 tons per day by 1980.² It is estimated that a total of 2,080,140 tons of refuse was collected and disposed of at landfills by Maryland's political subdivisions in 1974 at a cost of \$44.5 million.³ This cost includes the cost of collection, hauling, and disposal. A small portion of solid waste is incinerated, although due to stringent air quality standards, the only remaining large incineration system in Maryland is in Baltimore City where 10 percent of the City's solid waste is incinerated still leaving a 20 percent residue for landfilling.⁴

Because of the scarcity of suitable land and local opposition to siting, landfilling as a viable option for waste disposal is rapidly disappearing in Baltimore City and to a lesser extent in Baltimore, Montgomery, and Prince George's Counties.⁵ Throughout Maryland landfilling is becoming an increasingly expensive means of waste disposal. Studies

have been made of the economic feasibility of hauling solid waste from the Baltimore-Washington metropolitan area by rail to more remote areas of the State or out of State for landfilling.⁶

Contributing to this increasing solid waste problem is the "sky-rocketing" increase of beer and soft drink containers, from 15.4 billion nationally in 1959 to 55.7 billion in 1972 while the quantity of beer and soft drinks increased by only one-third.⁷ This production has increased to over 61 billion units in 1973 and, if the trend continues, there will be over 112 billion beverage containers manufactured in 1985.⁸ In 1972, these discarded containers amounted to 8.2 million tons entering the solid waste stream nationally.⁹ According to the Environmental Protection Agency, "beverage containers are the most rapidly growing segment of all municipal waste with a growth rate of approximately 8 percent per year".¹⁰ This compares to an overall growth in solid waste of 3.0 percent to 13.5 percent annually.¹¹ Nationally, this equates to an annual waste management cost, computed by weight, of \$160 million for non-returnables in 1971.¹²

In Maryland, the total weight of beverage containers entering the solid waste stream is presently 246,922 tons annually.¹³ It is estimated that this figure represents 1.7 billion containers.¹⁴ Beverage container solid waste includes 206,053 tons of glass containers, 34,172 tons of bi-metal cans, and 6,697 tons of aluminum cans.¹⁵ It is further estimated that glass and metal containers represent 15 percent of the total solid waste stream in Maryland. Using the 8 percent growth rate predicted for beverage containers annually, the predicted growth in the solid waste stream attributable to beverage containers in Maryland is nearly 20,000 tons annually. It should also be noted that beverage containers do not readily decompose, thereby affecting landfill space more dramatically

than many other materials. It is estimated that it takes 100 years for a steel can, 140 years for an aluminum can, and "practically forever" for a glass bottle to break down into soil-sized particles.¹⁶

In Maryland, the cost of collecting, transporting, and disposing of beverage containers as solid waste is variously estimated at from \$1,000,000 annually¹⁷ after they are collected to \$6,675,000 for all costs using a straight line method of computation.¹⁸ Hence, a reasonable estimate of the cost of collecting, transporting, and landfilling beverage containers lies above \$1 million but below \$6.67 million, probably in the \$3 million to \$4 million range given costs of capital equipment, labor costs, land costs, and fuel costs all of which are necessary for collection and disposal and all of which are rising.

B. Solutions

There is no one solution to intelligently manage this mounting tide of solid waste in Maryland. In addition to continued landfilling and incineration, the recommended solutions are: (1) reducing the amount of solid waste entering the solid waste stream (source reduction); (2) establishment of local and regional recycling centers to collect reusable or recyclable solid waste (resource separation); and (3) mixed waste recovery systems (pyrolysis or resource recovery plants). Landfilling and incineration (where in compliance with air quality standards) of solid waste will continue to be necessary methods of disposal for the foreseeable future. However, these methods will continue to escalate in cost making other systems more cost competitive.

1. Source Reduction

In order to properly manage solid waste in Maryland, we should reduce the generation of solid waste. One of the recognized methods of source

reduction is mandatory deposit legislation for beverage containers. By requiring a 5 cent deposit and refund on all beverage containers in Maryland, it is estimated that the 246,922 tons of beverage containers currently entering the solid waste stream could be reduced to 55,252 tons annually, a 77.7 percent reduction.¹⁹ This compares to the 88 percent reduction in beverage container solid waste realized in the first year of Oregon's mandatory 5 cent refund law²⁰ and to the 70-75 percent reduction estimated for such legislation nationwide by the Environmental Protection Agency.²¹ With the beverage container portion of the solid waste stream expected to increase 8 percent annually, mandatory deposit legislation can greatly reduce this expected increase in container related solid waste.

Oregon experienced an estimated \$656,832 savings in solid waste disposal costs in the first year of its "bottle bill".²² Monetary savings to local political subdivisions in Maryland as a result of a mandatory 5 cent deposit and refund system for beverage containers can be expected in the range of \$3 million to \$4 million annually, with this amount expected to increase due to cost increases in collecting, hauling, and disposing of solid waste. Although it is not certain that a reduction of beverage containers entering the solid waste stream will result in an immediate one-to-one reduction in collection, transportation, and disposal costs, it is assumed that over a period of time due to a decrease in tonnage, less need for equipment, re-routing of pickups, and less use of land for landfilling, there will be a concomitant savings in solid waste collection and disposal costs.²³

In addition to requiring product reusability, source reduction also emphasizes the use of products which last longer; two examples being the

40,000 mile radial tire and products that use less packaging, and the redesigning of food packages to include less paperboard.

One of the immediate options available to the State of Maryland to reduce solid waste is a mandatory deposit system for beverage containers.

2. Source Separation

Currently, except for all-aluminum cans, less than 1 percent of beverage containers are source separated for recycling in Maryland. Local recycling centers generally collect only newspapers and all-aluminum cans. Dr. Jack Tawil in his report on the "Social Costs of Beverage Containers" assumes that no glass or bi-metal cans are currently source separated in Maryland.²⁴ According to Dr. Tawil's report, 19.4 percent of aluminum containers are recycled. Current industry figures indicate that this is now up to 25 percent.²⁵ However, the aluminum beverage can accounts for only 27.0 percent of beer sales and 9.4 percent of soft drink sales in Maryland and a much smaller percentage of total beverage containers by weight.²⁶ Since the source separation of beverage containers in Maryland is less than 400 tons of aluminum cans annually, obviously methods could be pursued to increase recycling through source separation.

Local and regional recycling centers could be established throughout the State of Maryland. Centers could be set up by the counties and in Baltimore City at convenient locations, e.g. on county and city property and shopping center parking lots. Glass containers (food and beverage), aluminum cans, steel cans, newspaper and other material could be collected. Regional centers, either run by one county or by several counties could then market these collected resources to obtain maximum prices. All of this must be investigated as to cost-effectiveness with the all-important variable the price that can be obtained on the scrap market for the source

separated materials. Several municipalities and many civic groups are already operating "recycling centers". A change in tax incentives to encourage industries to utilize reclaimed materials would dramatically affect such recycling efforts by stabilizing the market and price levels for reclaimed resources.

In addition, separating refuse for collection could be initiated on a trial basis. A successful program has been underway for several years whereby newspapers are separated by consumers at the curb in the city of Madison, Wisconsin. They are collected during regular refuse pick-up and placed in racks under the refuse trucks while the rest of the refuse is placed in the rear of the trucks and compacted. Recycling systems for paper wastes in large office complexes should also be implemented. Similar methods of source separation have been implemented by the Environmental Protection Agency in several municipalities and counties in the U. S.

This increased recycling by source separation is recommended in addition to source reduction including a mandatory deposit and refund system for beverage containers.

3. Mixed Waste Recovery Systems

Two large scale mixed waste recovery systems have been built in Maryland. They are the Baltimore City Pyrolysis Plant (cost: \$23 million) and the Baltimore County Resource Recovery Plant at Texas, Maryland (cost: \$10 million). The Baltimore plant has had many well publicized problems and is currently undergoing another shakedown. Originally designed to handle 1,000 tons of solid waste a day, projections have been modified to about 500 tons per day. Both plants will recover metal, glass, and energy from solid waste. The Baltimore City plant is not yet, and it is possible,

may not become operational. Baltimore County's Resource Recovery Facility has been handling 500-600 tons per day of solid waste but is recovering and recycling only ferrous metals, including the bi-metal beverage can. Plans have been made to extract and market a glassy aggregate in addition to aluminum and refuse derived fuel. On January 4, 1977, an explosion in one of the plant's shredders closed the facility.²⁷ This shredder is not expected to be repaired for several months but the plant began operating, after sustaining \$300,000 in damage, using one shredder on January 10, 1977.²⁸ The plant is designed to eventually process 1500 tons of solid waste daily using three shredders.

Both of these plants are of an experimental nature and are not yet fully operational. Therefore, only the passage of time will allow adequate analysis of their impact on reducing the volume of solid waste in Maryland. Currently, it is minimal.

These and other large scale resource recovery facilities are necessary if we are to properly manage our solid waste in the future. It is estimated by Nick Humber, Director of the Environmental Protection Agency's Office of Solid Waste Management that by 1985 these facilities will divert 20 million tons of solid waste annually from the 200 million tons generated in the U. S.²⁹ However, Mr. Humber considers the notion that large-scale resource recovery facilities can solve our solid waste problem a "prevalent misconception".³⁰ Even after the solid waste has been processed through recovery systems, there remains a certain amount of residue, estimated to be 15 to 20 percent of the original tonnage, which must be landfilled.³¹

Mr. Humber concludes, and it is the conclusion of this report, that to properly manage our increasing solid waste, it is necessary to implement source reduction methods (such as mandatory deposit legislation for beverage

containers) in addition to initiating increased resource recovery through source separation and large scale mixed waste recovery facilities.³²

Even new resource recovery and source reduction methods will not eliminate the need for landfills and incineration in the foreseeable future. It is clear that neither waste reduction, source separation, or large scale resource recovery facilities will alone solve the problem of how to dispose of our mounting solid waste.

One final comment is in order on the economic effects of a 5 cent mandatory deposit system for beverage containers on resource recovery efforts in Maryland. As has been indicated in Section B-2 of this part of the report, of all types of beverage containers, only aluminum cans are currently recovered and recycled to any significant degree in Maryland. However, the one study done on this subject for Maryland concludes that with much higher rates of source separation, the value of beverage containers recycled under a 5 cent mandatory deposit system would decline from the present rate by \$7,450 annually, a nominal sum.³³ Further, the report concludes that under a 5 cent mandatory deposit system, the Baltimore City resource recovery facility would realize an increased net income of \$308,785 annually when fully operational.³⁴ This increase is attributable to a relative increase in combustibles which are used to produce steam and have a higher economic value than glass or metals. From these figures, it should be apparent that a mandatory deposit system for beverage containers is not only compatible with resource recovery, but in Maryland increases the economic benefits of a large scale resource recovery facility.

C. Summary

The amount of solid waste in Maryland needing disposal is increasing so that in 1974 it was estimated that new facilities will be needed for

over 11,000 tons daily by 1984. This compares to 12,600 tons per day of solid waste being disposed of in 1974. The problem of where and how to dispose of this waste is compounded in the Baltimore-Washington metropolitan area by increasing difficulty in utilizing the traditional methods of disposal by landfilling and incineration.

Further aggravating this disposal problem is an expected increase of 8 percent (or 20,000 tons) per year of beverage containers to the solid waste stream. This expected increase is in addition to the 246,922 tons of beverage containers presently disposed of in Maryland. Beverage containers are the most rapidly rising portion of the solid waste stream.

By implementing a 5 cent mandatory deposit system for all beverage containers sold in Maryland, solid waste attributed to these containers could probably be reduced by 191,670 tons a year, a 77.7 percent reduction over present figures. Such a system would save Maryland's local governments between \$3 million and \$4 million annually in collection, transportation, and landfilling costs.

In addition to a mandatory deposit system for beverage containers and other methods of source reduction, increased resource recovery is recommended to help solve the problems of mounting solid waste. Source separation can be accomplished through local and regional recycling centers, separate separation by the consumer for collection by refuse trucks, and office paper recovery systems. Large waste recovery systems have been built in Maryland but are not yet accomplishing a significant amount of resource recovery and solid waste reduction. However, these systems should be pursued as they are legitimate and necessary approaches to reduce the amount of solid waste required to be incinerated or landfilled.

Resource recovery, either by source separation or mixed waste processing plants, would not be significantly hindered by a 5 cent mandatory deposit system for beverage containers and, when refuse-derived fuel is recovered at resource recovery facilities such as the Baltimore recovery plant, operating revenues are actually increased. Therefore, these options are compatible with one another.

For the foreseeable future, landfilling and incineration will continue to be necessary for solid waste disposal. However, to handle increasing solid waste and diminishing landfills, source reduction and resource recovery systems must be implemented in Maryland. A first step in the source reduction of solid waste could be a mandatory 5 cent deposit and refund system for beverage containers instituted in Maryland. Such a system can be expected to substantially reduce beverage containers as solid waste.

CHAPTER II

Footnotes

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CHAPTER III: BEVERAGE PRICES AND SALES

A. Probable Effects on Retail Prices

Under a mandatory deposit system, there is no reason to expect a causal price increase in beverages. On the current market, equivalent amounts of beverage cost, on the average, two or four cents less in returnable bottles than in throwaways.¹ Although returnables cost more to handle, this cost per bottle is presently included in returnable bottle prices, yet beverages in such containers are still cheaper than beverages in throwaways. This is because the cost of packaging returnables is spread over many uses, while the cost of the non-returnable package is absorbed by the consumer in one use.²

N.E. Norton, President of Royal Crown-Dr. Pepper Bottling Company of Corpus Christi, Texas, explains the price differential between refillables and throwaways as follows:

"While costs of cans and bottles vary, depending on freight costs, volume, design of the container, etc. we can assume approximate costs to the bottler of 4¢ for a throwaway bottle, 6¢ for a can, and 10¢ for a refillable bottle. In marketing soft drinks in a throwaway bottle or can, the bottler must include the cost of the container -- 4¢ or 6¢. On the other hand, if the bottler markets his product in refillable bottles, and obtains the national average of 15 trips per bottle, his container costs are fractions of a cent. If his bottle washing costs are 1¢ or 2¢, he can supply a soft drink in a refillable bottle to the retailer at 3¢ to 4¢ less than he can in a throwaway bottle or can. Then if it costs the retailer 1¢ or 1-1/2¢ to handle returnables, the consumer can still purchase a soft drink in a refillable bottle from 2¢ to 3¢ less than he can in a throwaway bottle or can".³

According to a survey conducted by Stanford C. Bernstein & Company, packaging represents the major factor in the production of beer,

accounting for as much as 56 percent of the costs while the ingredients account for only 12 percent.⁴

Thus, under a mandatory deposit system, two factors become pre-dominant in the new beverage price equation. The first is the increase in handling and distribution costs resulting because beverage containers must return through the distribution system to the bottler or to a metal processing mill. The second factor is the decrease in container cost for the bottler or brewer. This factor is highly dependent on the average number of trips a refillable container makes between the filling lines and the consumer. An appropriate national average for trippage rates is probably 15 trips per container. N.E. Norton of Royal Crown-Dr. Pepper Bottling Company, Corpus Christi, Texas, has stated that while the trippage rate varies with locality, one container can make as many as 50 trips. He reports an average of 20 trips per container with his bottling company.⁵ John Quarles of the EPA has also testified that most bottles make more than 10 trips and 25 or 30 trips is not unusual.⁶ Using the conservative trippage figure of 10, the container cost per use to the bottler or brewer drops to approximately one cent. This minimum estimate of savings is alone more than enough to balance the increased distribution, washing, returning and refilling costs of a returnable system.⁷

A 1976 report issued by the Federal Reserve Bank of Boston on the economic impacts of a deposit law in Massachusetts stated that not only did the available evidence indicate that returnable-recyclable beverage containers would not require higher prices, but also that the net effect of cost changes could permit retail prices to fall.⁸ In addition, a report by the Michigan Public Service Commission predicts a savings to

Michigan consumers due to lower prices of beverages attributable to returnable bottles.⁹

These savings could, however, be decreased slightly due to the new capital requirements necessitated by a major shift to refillable bottles, which are likely to be passed on to the consumer. These increased costs would be distributed over the number of containers handled during the life of the equipment and the resulting slight increase in the annual "cost" of capital investment would be more than offset by the diminished cost of production associated with a refillable system.¹⁰ Although the net result may be that the transitory costs could raise the current price of refillable containers, it is unlikely that this increase will exceed the current non-refillable container price.¹¹

Considering all costs attributable to factors directly affected by a mandatory deposit law, including reduced container cost, increased labor and distribution costs, Dr. Tawil of the Maryland Department of Economic and Community Development predicts a price decrease of 1.92 cents per container as a result of deposit legislation in Maryland.¹²

B. Experience In Other States: Prices

1. Oregon Prices

In Oregon, there have been price increases for beverages since 1972, but both studies that have examined prices concluded that no price rise is attributable solely to the bottle bill. With beer, the increase was attributed by brewers to an increase in the price of grain, increased labor costs (due to inflation), and increases in other materials used in brewing and packaging.¹³ Prices remain comparable with neighboring Washington, with major savings available to those Oregon consumers who buy beverages in refillable bottles.^{14,15}

2. Vermont Prices

As they did in all other states, soft drink prices in Vermont increased during 1974, the first full year of the law. Because of general inflation and extremely large increases in sugar prices, however, it is impossible to trace the impact of the shift to a refillable system on the overall increase in prices for soft drinks.¹⁶ Price increases also occurred for beer, but the legitimacy of these price changes is a point of controversy in Vermont. Some reported price increases up to 60 percent or more are questionable in view of the Oregon experience and the fact that one regional brewer has apparently been able to keep prices substantially lower.¹⁷ One problem was that the Vermont law did not originally require that beverage containers be refilled or recycled. Consequently, during the first year, Vermont beer wholesalers largely continued to use the same non-returnable glass bottles that they had been using. Since the higher distribution costs of a refillable bottle system were not compensated for by the lower cost of a refillable bottle, beer prices rose between 10 and 15 cents per six-pack.¹⁸

C. Probable Effects on Sales

Dr. Tawil of the Maryland Department of Economics and Community Development predicts a decrease in beverage sales amounting to approximately 1.5 million cases for softdrinks and 4.0 million cases for beer under a mandatory deposit law.¹⁹ These estimates are based on demand equations of the report and on a consumer inconvenience factor which was based primarily on Vermont data during 1973-74. Dr. Clopper Almon of the Governor's Council of Economic Advisors has questioned both the income elasticity and standard error coefficients of Tawil's demand equations. He suggests that the income elasticity coefficient for beer

of 0.12 should be higher. This figure would indicate that as income increases, beer consumption rises only 12 percent. Dr. Almon suggests that this relationship is higher, noting that the corresponding coefficient used in the soft drink demand equation is 1.237 or 123.7 percent. Dr. Almon also questions the standard error coefficients of the demand equations which are .028 or 2.8 percent for beer and .018 or 1.8 percent for soft drinks, suggesting that on a state level, these coefficients should be larger.²⁰ The questionable nature of Tawil's inconvenience factor and the Vermont data are discussed in the next chapter of this report.

The fact that there exists considerable disagreement in the coefficients which Tawil employs in his base equations compounded by Tawil's focus on transitional costs and effects, illustrates the difficulty in using many of his predictions as an accurate assessment of the impact of a mandatory deposit system in Maryland. Tawil himself indicates that his statistical estimates of the demand for beer and softdrinks and consequently the volume of beverage sales will affect all further estimates of employment, incomes, capital investment, energy use, tax revenues, litter and solid waste disposal.²¹

D. Experience in Other States: Sales

1. Oregon Sales

Claims by opponents of the bottle bill in Oregon that it would severely reduce sales of beer and soft drinks are not borne out by analysis of the available data. After adjustment during the first year (in which beer sales only increased 1.37 percent), beer sales have returned to their historical growth rate, with a 5.67 percent increase

registered in the second year. In the third year, beer sales in Oregon increased 3.79 percent compared to a national increase of 2 percent.²² Malt beverage sales in Oregon have a history of fluctuation and it is probable that the bottle law did not affect the growth rate during the first year. Wine sales, which were not affected by the deposit law, also showed a reduction in percentage increase that year, approximately equal to that for beer sales.²³

Soft drinks are not as well documented as beer sales, and estimates vary. The study prepared for Oregon by Applied Decisions Systems indicates no change in total soft drink sales (by volume) in the twelve months after the law, as compared to the year prior to enactment.²⁴ In a different investigation, however, survey reports from bottlers and distributors led Drs. Gudger and Bailes of Oregon State University to conclude that, with "the most conservative figures", sales were up ten percent over the previous year, well above the national average of 5.8 percent.²⁵ The available data and analyses do not show that the bottle law caused a decline in beer or soft drink sales in Oregon.

2. Vermont Sales

In Vermont, beer and soft drink sales did decline after implementation of the law; estimates show beer sales down 13 percent by May, 1974. Hard liquor sales, although not affected by the mandatory deposit law, also decreased 15 percent during this period.²⁶

The reasons for these declining beverage sales are unclear, but are most certainly due to a number of factors in addition to the law itself. Vermont, which is heavily dependent upon recreational tourism, was plagued with the fuel shortages and poor snow conditions during the

winter of 1973-74. The Vermont economy was off 11 percent, tourism was off 16 percent overall and 25 percent during the peak ski season.²⁷

The record also shows that Vermont distributors had accumulated inventories of beer in one-way containers (no deposit, no return) in anticipation of the law. When the law came into effect, they simply sold off their stock of one-way containers, thereby inflating the previous year's distributors sales and deflating their subsequent year's sales.²⁸

E. Summary and Conclusions

The experience of both Oregon and Vermont indicate that beverage prices do not increase within a mandatory deposit system. Other studies indicate that a decrease in price may be expected under such a system. With a decrease in the average price of beverages, or at worst no change in price, the factor of price changes can be discounted as a cause for sale changes under mandatory deposit systems.

The Oregon and Vermont experiences do suggest, however, that there may be a "slight" drop in sales during the first year resulting from the law's implementation. Following this period of adjustment, the growth in sale can be expected to return to its historical rate.

In short, evidence indicates that beverage prices are not directly affected by the implementation of a mandatory deposit system. There may be a slight transient drop in sales when such a system is implemented, but no long-run effects are expected on either the price or sales growth rate of beverages.

CHAPTER III

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CHAPTER IV: CONSUMER INCONVENIENCE AND RELATED ISSUES

A. Introduction

Consumer inconvenience is a construct designed to explain why consumers would pay more for throwaway containers than they would pay for reusable containers. The construct, of course, assumes that consumers are willing to pay more for the convenience of discarding rather than returning containers, yet the term has little to say about the actual parameters of that judgment. It will be our task to analyze the parameters of consumer inconvenience in Maryland and relate our analysis to mandatory deposit legislation.

Our subject matter, consumer inconvenience, is not strictly an economic problem. It is much more a psychological or behavioral problem which has been measured in economic terms. Thus, one warning to the reader. An economist is not trained in understanding human behavior, at least not in the same sense as a psychologist. Oftentimes, when an economist makes an assumption concerning human behavior it is nothing more than that - an assumption. True, it may be based on common sense, but common sense is not always translatable into fact and what is common sense to one person may seem ridiculous to another person.

Fundamentally, there are two questions which must be answered: How does one measure consumer inconvenience? And more importantly, perhaps, what does the measurement mean? In Maryland this phenomenon has been measured in two separate economic reports. The first attempt was made by Jack Tawil in a study conducted by the Maryland Department

of Economic and Community Development (the DECD report).¹ The second attempt was made by Anne Strees in a study submitted and approved for Honors in the Economics Department at the University of Maryland.² The Chairman of Ms. Strees' evaluation committee was Dr. Clopper Almon who is a member of the Governor's Council of Economic Advisors.

We will examine both studies, discuss areas of conflict and present our own analysis and conclusions.

B. The Tawil Report: "Social Costs of Beverage Containers"

Dr. Tawil's analysis begins with the observation that consumers are willing to pay "as much as 4 cents more for soft drinks in one-way containers of the same brand and size than in returnables".³ He attributes this phenomenon to consumer inconvenience which he defines as the inconvenience of returning the beverage container to recover the deposit.⁴ A direct implication of what he says is that consumers are willing to pay as much as 4 cents per container to avoid the inconvenience associated with returning the containers.

Tawil then proceeds to test out his observations by attempting to calculate the inconvenience factor for people who live in Maryland. He decided to do this by analogy using Vermont, which has enacted mandatory deposit legislation, as his case study. Essentially, Tawil based his estimates on sales data before the law went into effect and sales data just after it went into effect. He found that the inconvenience factor associated with soft drink containers was 3.6 cents per container. Tawil attempts to relate his Vermont figures to Maryland in the following way: He notes that it is his belief that Marylanders place a higher value on the convenience of one-way containers. This is so, according to Tawil,

because Maryland is more urbanized than Vermont. Therefore, he concludes that his Vermont figures represent minimal values and probably understate the actual values for Maryland.⁵

Tawil's report concludes that "On economic grounds, it is not possible to justify mandatory deposit legislation."⁶ However, this conclusion is reached only by attaching negative economic values in the \$50 million to \$51 million range for consumer inconvenience.⁷ Under a 5 cent mandatory deposit system, alternative III in the Tawil report, he computes a social cost of \$53 million for Maryland, \$50 million of which is attributable to consumer inconvenience.⁸ Given even only a slight variance for statistical accuracy, Tawil's report would indicate that without the consumer inconvenience factor, the net economic effect of a five cent mandatory deposit system would be negligible, while reducing litter and solid waste and reducing the rise of natural resources and energy.

C. The Strees Study: "Economic Impacts of Bottle Legislation in Maryland"

The Strees report is critical of the results obtained by Dr. Tawil in his section on consumer inconvenience and proceeds to analyze the subject differently. Ms. Strees first disputes Tawil's methodology and the validity of his Vermont sales and price data. She then addresses a conceptual difference pointing out that what the Tawil report identifies as consumer inconvenience is really transition inconvenience cost.

The Strees study begins by noting that Tawil has relied heavily upon estimates of income and price elasticities for beer and soft drinks. Income elasticity measures the demand for a product as available income is either increased or decreased. Price elasticity measures the demand for a product as the price is increased or decreased. The study observes,

however, that "cross-sectional studies demonstrate that Tawil's estimates of income elasticity for beer is too low and income elasticity for soft drinks is too high".⁹ The problem, according to Strees, is that Tawil relies on "annual demand data" which is dependent upon demand from the year before. "In other words, price levels are not independent" and theoretically they should be. "Cross-sectional studies are not biased in this manner since for a given year they examine consumption in different income groups."¹⁰

Recalculating the Tawil figures using cross-sectional estimates of price elasticities rather than annual demand estimates, Ms. Strees finds that the Tawil figures should be reduced from 2.3 cents for beer containers to 0.66 cents, and from 3.6 cents for soft drink containers to 0.94 cents.¹¹ The new figures are approximately one quarter the size of Tawil's original estimates. However, as Strees points out, even these new figures may be suspect on a number of grounds.

First of all, Strees notes that Tawil's estimates of consumer demand assume that there were no abnormal variations which affected Vermont during the period measured, 1973-74. Strees then goes on to list three abnormal variations which may well have reduced demand: a major flood, a disastrous ski season, and a lowering of the drinking age in New Hampshire, Vermont's neighbor.¹² (A full discussion of these variations and some additional variations not mentioned in the Strees report will be presented in Section F of this chapter, the "Discussion of the Vermont Data").

Secondly, the Stees report introduces the question of why the Tawil report chose to base its estimates on Vermont rather than upon Oregon statistics, which were much more favorable toward mandatory deposit

legislation.¹³ Even Tawil admits in his report, Oregon data would have produced a much smaller consumer inconvenience factor.¹⁴

Finally, as we mentioned earlier, the Strees study objects to Tawil identifying his measurements as representing consumer inconvenience when in fact his measurements identify transitional inconvenience. Strees points out that in both Oregon and Vermont, sales went down initially, but thereafter recovered and returned to normal. (Note that in Vermont and Oregon there were external factors which further depressed sales during the transitional periods). Her conclusion is that as consumers become more accustomed to returnable containers, inconvenience costs will decline and approach a stable inconvenience cost.¹⁵

D. Criticism of the Tawil Report's Vermont Statistics

During Dr. Tawil's testimony before the Governor's Task Force to Study Mandatory Deposit Legislation, a number of questions were raised concerning the validity of his Vermont statistics. Although the following events have been documented (see Appendices B, C, and D), Tawil testified that he knew nothing about these issues and therefore did not take them into account in his Vermont sales data for 1972-1974:

1. Skiing conditions in this period were extremely poor and, consequently, Vermont suffered a disastrous ski season. As Vermont is the ski center of the East Coast, it was hit hard by this loss of skiers.¹⁶
2. Climatic conditions were particularly severe. There was extreme cold coupled with severe gas and oil shortages.¹⁷ Furthermore, severe flooding took place, "which seriously curtailed the summer tourist and recreation industry".¹⁸
3. New Hampshire reduced its drinking age to 18 during the transition period. Teenagers from New Hampshire who used to buy beer in Vermont bought beer in their own state.¹⁹
4. It was alleged that the beer lobby attempted to raise its prices unnecessarily high in order to make the Vermont experience a failure.²⁰

5. It was alleged that brewers refused to convert their containers to reusables, and encouraged stores to stock throwaways.²¹
6. It was alleged that New Hampshire dealers were encouraged to reduce their beer prices to draw Vermont customers into their own state, even to the extent of losing money on the beer they sold.²²

E. Dr. Tawil's Response to His Critics (see Appendix E for complete statement)

Dr. Tawil readily admits that Vermont suffered a severely depressed ski season, experienced a flood, and endured gasoline and fuel oil shortages which were made even worse by unusually cold weather. However, he suggests that these conditions may not have affected his sales data. According to the source which he cites, New York and New Hampshire experienced a "similar winter, a gasoline crisis, inflation, and worsening general economic conditions" and showed no similar decline in sales.²³

Tawil acknowledges that the lowered drinking age in New Hampshire would effect his estimates of beer sales, although he correctly observes that since the drinking law went into effect on June 3, 1973, his estimates were overly high for only a little more than half the time he was taking measurements, (September, 1972 - August, 1974).²⁴

Tawil finds it unlikely that Vermont distributors were jacking up beer prices. According to his source, excluding the deposit, the average price increased by only 13 percent while just before the imposition of the deposit law, leading brands of beer accounting for 75 percent of the total market were increased 11 to 12 percent. He concludes that "had Vermont distributors the desire and capability of jacking up beer prices to protest the bill, I would think that a much higher price rise would have been observed".²⁵

Tawil admits that he does not know the truth of the allegations that Vermont brewers refused to convert their containers to reusables, and encouraged stores to stock throwaways. However, he states there are "economic explanations" for the phenomenon of reduced availability of brands in Vermont. Furthermore, he goes on to explain that in Maryland this problem would not arise (or would arise to a much lesser degree) because the Maryland market is so much larger and could sustain many more brands, even with a deposit.²⁶

Finally, Tawil acknowledges that it is possible that New Hampshire stores were urged to sell their beer at a reduced price, even to the point of taking a loss, but he contends that the owners apparently ignored the pressure. This conclusion was drawn from the fact that "during the relevant period, beer prices in New Hampshire did not decline". He continues, however, by stating that this fact does not imply that beer was not sold at a loss.²⁷

F. Discussion of the Vermont Data

Before we enter into a discussion of each specific dispute involving the Vermont data, one general comment is in order. When Dr. Tawil conducted his interviews in Vermont, he relied heavily on information furnished to him by the beverage and related industries.²⁸ He and his staff claim that they were not aware of any discrepancies associated with their sales data when they wrote their report.²⁹ This indicates, at the very least, that Dr. Tawil arrived at his conclusions without the benefit of all the facts, and the fact that Tawil explained such discrepancies only when questioned after his report was completed, casts doubt on the credibility of the report.

The first question in dispute is what effect did the disastrous ski season, the floods, the gas and oil shortages have on the available sales data? According to Tawil, the effect was minimal in terms of his report. He cites a study of three areas in New York bordering Vermont which show no similar decline in sales such as those experienced in Vermont during the first year of the new law's operation.³⁰

More recent data collected by Forest Golden, a professional engineer from New York (see Appendix D), indicates that the data Tawil used was overly narrow and therefore not adequate for making comparisons. In the Golden Study, growth rates for beer sales were compared in three states, Vermont, New York, and New Hampshire, during fiscal years 73/74, 74/75, and 75/76. His study shows that after the transitional year 73/74, the growth rate in Vermont has increased markedly and, in fact, is much higher than growth rates for New Hampshire and New York.³¹

Two factors most probably account for the difference between Golden's conclusion and the conclusion reported by Tawil on border areas:

1. Tawil's data includes only border differences during the transitional period and focuses, exclusively, on three areas in New York State. Even if the border areas which were compared were representative, and we have no real way of knowing, the fact that border areas were isolated for comparison probably skewed the results. There can be little doubt that if sales depressions were to occur, they would have occurred most noticeably along borders.³²
2. Again, Tawil's data includes only the transitional period, while Golden's results focus on the transitional period and post transition period. It is therefore a more accurate picture of the longer term affects.
3. Finally, according to Leigh Seddon, Assistant Director of the Vermont Public Interest Research Group, and a leading expert on the Vermont experience with mandatory deposit legislation, the initial decline in beer revenues during 1973 was matched by comparable declines in cigarette, hard liquor, and gasoline sales as well.³³ This indicates that there were factors beyond the deposit legislation which were responsible for declines in sales.

The second question concerns the effect of New Hampshire's reduced drinking age on Vermont sales. There is no disagreement that the drinking age was lowered and that it went into effect on June 3, 1973.³⁴ How much this actually depressed sales in Vermont is difficult to say, but the effects were most heavily felt along the Vermont-New Hampshire border. Furthermore, since this factor was not taken into account by Tawil, we may conclude that whatever the effect actually was, it should have been subtracted from the consumer inconvenience factor that Tawil attributes to the effects of mandatory deposit legislation in Maryland.

The third question dealing with whether or not Vermont beer distributors raised their prices unnecessarily high is difficult to evaluate. On the one hand, there are allegations by respectable consumer groups,³⁵ and the Governor,³⁶ who insist that the prices were tampered with. On the other hand, we have evidence that almost all of the retail price increase was due to an increase in the wholesale price just before the deposit bill went into operation.

Assuming for the moment that Tawil is correct, and wholesale increases did cause much of the price leap, two possibilities remain open. One, the wholesale increases were legitimate. Two, the wholesale increases were contrived to reflect poorly upon Vermont's deposit legislation. In either case, we have a price rise which would not be related to the deposit bill, which depressed sales, and which was not reflected accurately in Tawil's results. However, if the price rise was unnatural, forced by either wholesalers or retailers, an additional factor must be taken into account. A deliberate distortion of the price would skew any comparative data between Vermont and other states. Not only would sales be depressed because each person's relative buying power

would be decreased, but sales would be further depressed by those Vermont residents who live close to the borders and elected to purchase their beer in those states which did not experience this temporary increase during the transitional period.

The fourth question concerns the possibility that the brewers in Vermont deliberately refused to convert their containers to returnables and encouraged stores to stock throwaways. Again, this type of charge is difficult to evaluate. On the one hand, there is the allegation by a well known economist and expert on mandatory deposit legislation,³⁷ as well as similar charges by consumer groups.³⁸ On the other hand, there are denials by industry and an economic explanation of the phenomenon by Tawil.

Assuming Tawil is correct and reduced availability of brand names did in fact occur, this may have had little to do with the inconvenience brewers allegedly caused consumers, and certainly does not discount the possibility that these inconveniences were deliberate. It is merely one possible explanation of why the confusion took place, and is not supported by any other data.³⁹

However, Tawil contends that the problem caused by the reduced availability of brands might be offset in Maryland by the increased volume of sales which would support a greater variety of brands.⁴⁰ If this is true, and it certainly makes sense, the Maryland market would not suffer from this problem. Therefore, Tawil's consumer inconvenience estimates for Maryland, which do not take this factor into account, are obviously too high.

Furthermore, if Tawil's explanation does not account for all the dislocations caused by the brewers, and it is unlikely the explanation

would account for all of it, there remains that unaccounted portion which should be subtracted from the transitional sales decrease measured in the Tawil report.

In either case, whether Tawil's explanation is correct or not, he has overestimated his consumer inconvenience factor. The question is by how much?

The final dispute is whether or not New Hampshire stores sold their beer at reduced prices in order to draw business away from Vermont. Tawil says this is unlikely because during the relevant period New Hampshire prices did not decline.

As Tawil observes, the fact that New Hampshire's prices did not decline does not necessarily mean that prices were not reduced. In fact, if wholesale prices went up everywhere as Tawil has suggested, it would be relatively easy to sell beer at a lower profit margin or even at a loss without reducing the price.

G. Advertising and Lobbying

Consumer inconvenience, if it exists, will be influenced by psychological as well as economic factors. What people perceive to be true is a more direct determinant of their actions than what is actually true.⁴¹ Advertising and lobbying which "advertise" a specific point of view, are two powerful tools which have been used by the beverage and beverage container industries to create a climate which will negatively affect the attitudes of consumers towards the use of returnable containers.⁴² Millions, perhaps several billions of dollars, have been spent on advertising which promotes throwaways, and lobbying which opposes mandatory deposit legislation,⁴³ and all of this promotion is carried out at the expense of the consumer.⁴⁴

Advertising represents more than silly jingles and absurd life situations depicted on television or broadcast over the radio. Advertisements make use of scientifically tested programs which are intended among other things, to create a demand for a product which normally would not exist. As one advertising executive has written, the primary objective is to manipulate the consumer's emotions:

"Usually, advertising that is nothing but emotion, is produced for products like soft drinks, cigarettes, cosmetics, hair coloring, beer, candy, toys and products you might call luxury or unnecessary items. It figures too, since by definition a product you don't really need won't have a reason for being, and therefore, no claim. And so we load the advertising up with emotion, in an effort to create a need. Big phrase there; to create a need emotionally for something you don't logically need."⁴⁵

Even industry will admit the powerful effects of advertising on buying habits. The National Soft Drink Association, in its annual report for 1974, explains how heavy promotional activity helped lead to the success of the nonreturnable containers:

"In the latter half of the 1960's, growth of special products such as low calorie drinks, a declining pattern of returned containers by the consumer, and heavy promotional activity, spurred increased use of one-trip containers. This trend toward convenience packaging dissipated the market share of returnable bottles from 94.6% of purchased sales in 1960, to 34.7% in 1973."⁴⁶

Advertising has much the same role in the brewing industry. Mr. Cobb, the production manager for the National Brewing Company, has stated privately that the major difference between comparable lines of beer from company to company lie not in the quality of the product, but with the promotional activity used to sell it.⁴⁷ Stated more directly, a beer company increases its sales not by improving its product, but by improving its desirability in the eyes of consumers.

Lobbying constitutes the political arm of the promotional package. The two keys to successful lobbying are political influence and money. It is through lobbying that beverage and beverage container industries can wield power which the consumer cannot hope to match. Estimates of the amount spent in the recent referendums of Maine, Massachusetts, Michigan and Colorado are reported in Chapter VI: "Economic Impact on Beverage Industries and Government" of this report.

How much is actually being spent for lobbying on a national level is difficult to say. A conservative estimate by William Coors, the owner of the country's fourth largest brewery, put the figure at \$20 million for the brewing industry in 1974.⁴⁸ Of course, not all of this money is easily visible. National groups such as "Keep America Beautiful" or state organizations such as the Maryland Council on Environmental Economics, are financed largely by beverage and beverage related industries, and are used to shift attention from industry responsibility for litter to consumer responsibility.⁴⁹ Recently, after "Keep America Beautiful" took a stand against mandatory deposit legislation, the Environmental Protection Agency and other environmental groups withdrew from the organization citing its industry bias as the reason. K.A.B. now has no major environmental or consumer groups on its Board of Advisors.⁵⁰

H. How Do Advertising and Lobbying Affect the Issue of Mandatory Deposit Legislation?

The two work in concert. Together they can create and reinforce an artificial need for the so-called convenience of throwaway containers, while at the same time they can shift attention away from the benefits of refillable containers. Since both beer and soft drinks

are relatively inelastic as to price (this is so even when the price goes up, sales remain constant) the primary competition between brands is a matter of packaging.⁵¹ When one type of package, the throwaway, is promoted to the exclusion of its only competition, the reusable, consumer demand is artificially altered.

It is this type of promotion which, perhaps more than anything else, explains why consumers express overwhelming support for returnables but actually purchase throwaways. A national survey conducted by Opinion Research Corporation indicated that 73 percent of the American public favors a law requiring all soft drink and beer to be sold in returnable containers. Only fifteen percent are opposed to such a system. Another contributing factor in the purchase of throwaways is that most consumers are unwilling to shift back to refillable containers unless there is some assurance that their neighbors will do the same. Without this assurance, returning reusables would seem to be a wasted effort.

Fortunately, once legislation is passed, promotion can be used to reverse the process and reduce potential transitional problems. Where the benefits of refillable containers are stressed and where consumers are educated to those benefits, support for refillable containers will be magnified and potential transitional problems will be mitigated. An excellent method of reducing the costs of switching to refillable containers would be to mount a statewide campaign which would emphasize both the positive contributions of refillable containers and the potential benefits to consumer and industry alike of working together to maximize the efficiency of a new system.

To summarize briefly, advertising and lobbying have equal potential to block mandatory deposit legislation and cause needless transitional problems, or to support such legislation and to ease transitional problems. In this context, two things should be stressed: In evaluating mandatory deposit legislation, we cannot afford to ignore the existing negative influence advertising and lobbying have on both the consumers' and the politicians' views. However, we should not minimize the positive contribution promotional advertising could make during a transitional period if mandatory deposit legislation is enacted.

I. Transitional Costs

One of the major weaknesses of many analyses which attempt to measure the economic impact of reusables on the packaging industry is a tendency to "focus on transitional difficulties". As one economist has observed, this type of bias "can significantly warp the analysis".⁵³

Dr. Tawil in his presentation of consumer inconvenience has fallen into this pitfall. The entire thrust of his focus is upon transitional costs as opposed to long run efficiencies. In fact, his calculations of consumer inconvenience are actually measurements of transitional inconvenience⁵⁴ and even that measurement is in all likelihood inflated considerably due to external factors affecting his Vermont sales data.⁵⁵

While transitional costs should be noted where they actually exist, these costs should not obscure the long range or more permanent results of mandatory deposit legislation. This bias can be controlled by assessing transitional and long range effects separately, giving each its proper consideration.

J. Minimizing Transitional Costs

One of the most exciting potentialities associated with mandatory deposit legislation involves the possibility of significantly minimizing transitional problems through concerted action. This is especially true in "areas of high density population where returnables have had the least acceptance...(because) mechanisms to provide additional convenience would be most profitable".⁵⁶ A relatively dense population, a suburb or city, could easily support efficient recovery systems. For example, area redemption centers could be established especially in areas where retailers complain of space problems.⁵⁷ Or, standardized containers could be used and each container would be coded for mechanical sorting and cleaning.⁵⁸

Other factors could also help to reduce costs and inconvenience. As previously discussed, advertising could be used to promote a new system. This would have two effects. First, the anti-deposit campaign would be removed and second, a strong positive force inducing industry and consumers to work together would be instituted in its place. Consumers could cooperate by washing their containers before they are returned to the retailer or redemption centers. In Maine, mandatory deposit legislation specifically provides that a retailer need not accept bottles which are not "reasonably clean".⁵⁹

In any case, methods already exist for mitigating transitional difficulties and many new and creative solutions would follow if the proper atmosphere is encouraged.

K. Summary and Conclusions

1. Strictly speaking, consumer inconvenience is not an economic problem. It is a behavioral problem and attempts have been made

to measure it in economic terms.

2. Dr. Tawil's measurement of consumer inconvenience is flawed by:
 - a. reliance on annual demand data instead of cross-sectional studies;
 - b. a failure to account for a series of abnormal external factors which greatly inflated sales losses in Vermont; and
 - c. confusing transitional consumer inconvenience with actual consumer inconvenience.
3. Ms. Strees' measurement of transitional consumer inconvenience is preferred since it is based on cross-section data. However, she also did not account for the abnormal external factors in her estimates.
4. Actual consumer inconvenience is very difficult to measure. Due to methodological flaws, there is no acceptable estimate of consumer convenience for Maryland. If such a measurement could be made, it would be much less than a like measurement for transitional consumer inconvenience. With time, transitional inconvenience is reduced significantly and begins to approach actual consumer inconvenience.
5. Based on the figures from the Strees study, transitional consumer inconvenience in Maryland would represent no more than 0.66 cents for each beer container and 0.94 cents for each soft drink container. This is approximately one-fourth the figures cited by Dr. Tawil, which are 2.3 cents for each beer container and 3.6 cents for each soft drink container. On this basis, Dr. Tawil's conclusion that mandatory deposit legislation is economically unwarranted can be rejected. If Tawil's \$50 million consumer inconvenience factor is

reduced to \$10 million, which would be in accordance with the Strees estimate, then the net economic effect of a five cent mandatory deposit system would be minimal.

6. Beverage and beverage container industries have spent huge sums of money on advertising for usage of one-way containers and lobbying against returnable systems. The effect of these promotional efforts has been to distort consumer attitudes and to make mandatory deposit legislation appear to be more difficult to implement than it really is. Promotional costs used to encourage the purchase of throwaways or the defeat of mandatory deposit legislation are absorbed by the consumer in the price of the product. This expense would be eliminated if mandatory deposit legislation was enacted. Advertisements can be used to support mandatory deposit legislation if it is enacted, thus creating a favorable atmosphere for implementing the legislation. The more universal the support for such legislation, the easier it will be to mitigate transitional costs.

CHAPTER IV

Footnotes

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31. Appendix D.
32. "Letter from Donald Webster", Appendix C.
33. "Letter from Leigh Seddon", Appendix D.
34. "Response to Mr. Parry's Questions", Appendix E.
35. "Letter from Leigh Seddon", Appendix D.
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Footnotes

37. See No. 21 supra.
38. Ibid.
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41. "If men define situations as real, they are real in their consequences", W. I. Thomas, The Child in America (1928).
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CHAPTER V: EMPLOYMENT

A. CEA and DECD Reports

The impact of an Oregon-type "bottle bill" upon employment in Maryland's beverage-related industries has been investigated in depth by two reports, one from the Council of Economic Advisors (CEA) by Ted Scheinman and one from the Maryland Department of Economic and Community Development (DECD) by Jack Tawil. Both of these studies report that some industries, namely those concerned with the production of beverage containers, would be forced to reduce employment levels while those industries which are involved in the distribution and retailing of beverages would have significant increases in employment levels.^{1,2} Overall, these reports agree with every other study conducted on the employment impact of federal or state beverage container legislation, in that they indicate a net increase in employment resulting from the enactment of such a bill.

The DECD report investigates many different types of beverage container laws, but the one which is appropriate to this discussion and to comparison with the CEA report is Alternative III, which involves a mandatory five cent minimum deposit on all beverage containers, with no restrictions as to type of container.³ Although the two reports differ on numerical value of their projections, they are in many instances comparable as the following table indicates:

* The impact of this net increase in employment on taxes are discussed in Chapter VI of this report.

Table V-1
ESTIMATED EMPLOYMENT IMPACT OF DEPOSIT LEGISLATION *

	CEA	DECD - Alt. III
Soft Drink Bottling and Distribution	+ 388	+ 604
Brewing	+ 27	+ 10
Beer Distribution	+ 134	+ 477
Retail, Food and Liquor Stores	+1,703	+3,278
Retail, On-Premise Consumption (Restaurants and Taverns)	--	
Glass Container Manufacturing	- 279	(- 800 **
Metal Can Industry	- 403	(
Raw Material Suppliers	- 69 (metal suppliers only)	- 200
Total Gains	+2,252	+4,783
Total Losses	- 751	-1,250
Net Gain	+1,501	+3,783

* Submitted to Beverage Container Task Force Meeting, November 17, 1976.

Some of the more striking differences between the projections of the two reports are in areas of employment increase, rather than decrease. One major reason for the differences is that the CEA based some of its projections on the Oregon experience, while many of the DECD report projections are based on the Vermont experience with a mandatory deposit law. Carlos Stern, Professor of Agricultural Economics at the University of Connecticut, has investigated the experience of both of these states with beverage container legislation and has stated that Oregon is a better example of how a bottle bill can work since the law

** In recent testimony before the Beverage Container Task Force, Mr. Robert Evers of the Can Manufacturers Institute reported that the Maryland Can manufacturers estimate that enactment of mandatory deposit legislation would result in the loss of from 1050 to 1170 jobs currently engaged in the manufacture of metal cans sold to beer and soft drink producers. These figures assume that all beverage can production lines would close if such a law were enacted. (Testimony given January 11, 1977, p. 3).

was implemented more effectively in Oregon.⁴ Although the relative ease with which the law was implemented in Oregon was undoubtedly affected by the fact that 32 percent of beer sales and 60 percent of softdrink sales in the state were already in returnable bottles prior to the legislation,⁵ the lack of extraneous factors influencing the law's implementation was also equally important. In Vermont the presence of uncooperative retailers plus a number of other factors mentioned previously obscure the effects of such legislation and make Vermont a much less reliable source of base information.

It is very difficult to estimate the actual employment changes which would occur in Maryland as its industries differ substantially from both those of Oregon and of Vermont. The true extent of a mandatory deposit law can only be realized after such legislation is enacted. It is possible that the CEA report has underestimated some of the job losses and gains; it is also possible that the DECD report has overestimated these changes. A possible over-projection of job gains of the DECD report is in the area of retail industries, including food and liquor stores, restaurants, taverns, etc. Dr. Tawil's projection in the DECD report that a mandatory deposit system would place a considerable burden on beverage retailers⁶ requiring a substantial increase in personnel to check in, sort, and check out the returned empties is questionable. Stores have made successful adjustments in Oregon. The owner of the Plaid Pantry Stores (a chain of small groceries in Oregon and southwest Washington State) reports that each of ninety-one of his stores, staffed only by one clerk, can handle all the returnables they receive.⁷ The assertion that stores in Vermont went out of business due to the deposit law was met with an emphatic denial by Vermont Environmental Director Donald Webster.⁸

The technology which helped to bring about returnable containers could be applied to the returnable system, easing the handling of returnables for retailers and thereby reducing the need for increased personnel. In Europe, automatic bottle sorting machines accept the consumer's bottle returns and issue credit slips. As for cans, William Coors speaks highly of a "very simple machine which we refer to as a can eater", which crushes the cans and issues receipts to the consumer. He writes, "Our can-eating device completely eliminates the sorting and accounting problems the retailer has with returned containers and reduces his storage problem to a manageable minimum".⁹ Finally, the introduction of standardized containers, as provided by a certified container provision, would significantly reduce retailer sorting problems.

Another point of obvious discrepancy between the two reports is in their predictions for job losses among raw material suppliers. The DECD report estimates a job loss of 200 for these industries. Scheinman, author of the CEA report, only cites a job loss of 69 and fails to encompass raw material suppliers other than metal suppliers. Scheinman offers the following explanation for not considering the employment effects in the industries supplying materials to the glass container, metal can, and metal processing industries:

"These industries include limestone, iron ore, salt, glass sand, natural soda ash, bauxite ore, energy transport, and water, as well as the industries producing capital equipment for these industries. Employment in these industries in Maryland is small and in most cases container production requires only a small share of industry output."¹⁰

B. Containerization

One prominent difficulty with any projections of the impact on Maryland beverage-related industries is that it is impossible to

accurately predict the beverage container mix following the bill.¹²

The DECD and CEA differ on their projections for the container mix.

Ted Scheinman in the CEA report suggests that refillable bottles would rise from about 10 percent of the market for beer and 8 percent of the market for soft drinks to 60 percent of the market for each. The remaining 40 percent of the market would be divided between non-refillable bottles and cans.¹³ In contrast, Jack Tawil in the DECD report predicts that the refillable bottles will increase to 75 percent of the market for beer and 66 percent of the market for soft drinks, with cans retaining 20 percent and 23 percent of the market, respectively. Tawil expects one-way bottles to drop to 5 percent for beer and to 10 percent for soft drinks under a mandatory deposit system.¹⁴

Observations from other states indicate that the demise of the can is far from certain. Since Maryland is a leading producer of metal cans, this is an important aspect to consider. Although the market share of soft drink and beer fillings claimed by cans decreased drastically during the first year in Oregon, the can now appears to be making a minor comeback into the market.¹⁵ In Vermont, it is reported that refillable bottles are replacing non-refillables but they are not replacing cans.¹⁶

The Federal Energy Administration reports that with the impositions of a deposit law, non-refillable bottles can be expected to drop drastically in their market share; the can market share could either rise or fall; a switch by non-refillable bottle consumers to cans may lead to a growth in sales. Since a mandatory deposit would insure the return of the cans, they would be easily available for recycling and, therefore, more environmentally acceptable. From a convenience standpoint, cans would be easier to return than bottles, since they are

lighter and require less space and may be returned even in a damaged condition. In addition, can makers and beverage producers will face significant incentives to maintain the can as a capital investment in equipment dedicated to handling cans, the bulk of which cannot be shifted to other uses.¹⁷

In any case, the fact is that can lines do continue to operate under the bottle bill and it is expected that cans may still retain a sizeable share of the market due to consumer preference for unbreakable cans for outdoor use, because of their lighter weight, faster cooling, and smaller space requirements.^{18,19} A total or virtual elimination of the can is not likely to occur²⁰ and if it proves to be the better product, in terms of energy, transportation, and environmental costs, and consumer acceptance, then the assumed canning collapse will have to be discounted.²¹

C. Present Trend in Beverage Industries

In any discussion of the employment impact of mandatory deposit legislation on industries, it is important to include an analysis of the present employment trend in those industries and the probable trends if no mandatory deposit legislation is passed. The trend of consolidation and centralization of the beverage industry into large regional plants has been evident for many years. In 1971, the U. S. Department of Commerce reported a decline in employment within the beverage industry, resulting from increased automation and mergers.²²

In the brewing industry alone, some 26,300 workers lost their jobs between 1958 and 1974.²³ In 1935, there were 765 breweries in the United States, but by 1974 only 99 remained. These, in turn, were owned by 55 companies, six of which control 68 percent of the market.²⁴ Apparently

the number of breweries continues to dwindle, for in 1974, N. E. Norton, President of Royal Crown-Dr. Pepper Bottling Company in Corpus Christi, Texas, testified: "...Today there are only 64 brewing companies left. Fortune magazine predicts that only 30 breweries will be in operation by 1980."²⁵ An EPA study prepared by the Research Triangle Institute declared that the brewing industry is being concentrated and this trend "was encouraged and permitted by the introduction of non-returnable containers".^{26, 27}

In the soft drink industry, the trend is similar. Between 1970 and 1974, 7,900 workers lost their jobs in the soft drink industry.²⁸ Automation and modernization of processing facilities contributed to the production worker decline.²⁹ Between 1960 and 1974, the number of soft drink plants in the United States declined from 4,519 to 2,613, i.e. almost a 42 percent decline.³⁰ In 1974, Pat Taylor of the Environmental Action Foundation testified that forty out of 1,600 soft drink bottlers control more than one-third of all sales, equivalent to about \$5 billion.^{31,32}

N. E. Norton, President of Royal Crown-Dr. Pepper Bottling Company in Corpus Christi, Texas, has testified: "If present marketing trends continue, Softdrinks magazine predicts that by 1980, nearly 1,000 of the remaining bottlers will have gone out of business. This means concentration of the industry in a few large companies, some of which are committed virtually 100 percent to the throwaway container."³³

The throwaway container has made possible the shift from a local, labor-intensive system towards a capital-intensive one-way system. The small and medium size bottlers are finding it increasingly difficult to operate economically because of the multiplicity of package sizes and the introduction of canned soft drinks requiring separate production

lines. Bottlers and breweries today are set up as mass production and distribution centers, engineered for highspeed, low-labor, non-returnable container production.³⁴ The non-returnable container continues to provide the medium through which the consolidation of the soft drink industry and brewing industry is being achieved. Peter Chokola, a Pennsylvania soft drink bottler, reports:

One might wonder why there's a headlong rush of the American bottling industry towards conversion to one-way, disposable containers. The answer is monopoly. It becomes obvious to any competent observer that the returnable deposit bottle system imposes a natural limitation on the market area served from any bottling plant - the limitation being how far delivery trucks can carry the filled bottles and return with empties. This back and forth distribution system is an efficient system of recovering and recycling, with the costs internalized within the industry.

The national brand franchise companies (Coca-Cola, Pepsi-Cola, 7-Up, Canada Dry and others) recognized the advantages accruing to themselves from a system whereby they could sift out their product and forget about the empties. A one-way system eliminated the need for diversified plant arrangement, it offered huge reductions in labor costs incidental to rehandling the empties, but most of all it provided the medium through which monopolization would be achieved.³⁵

The only conclusion possible from this commentary is that the soft drink and brewing industries will continue to increasingly automate their production, consolidate and centralize their facilities and continue to move towards oligopoly in the industry. Consequently, a continuing decline in employment levels within these industries is likely.³⁶ The entrance of plastic into the market means even more job losses for workers in the glass and can industries.³⁷ A mandatory deposit system would arrest and possibly reverse these trends, by halting the trend towards centralization of the soft drink and malt beverage industries and by providing a net increase in the number of jobs available due to the labor-intensive characteristic of the returnable system.³⁸

D. Phase-In Period

Many researchers have endorsed the concept of a phase-in period in which the legislation could fix a future date when all beverage containers in the state would have to have a minimum deposit. This intervening period would provide the opportunity for employment adjustments in the container manufacturing industries, and would spread out the capital investment required for firms which otherwise might experience cash-flow problems.³⁹ This time allowance before the mandatory deposit law took full effect could ease employment dislocations and would allow the opportunity for more effectively retraining and relocating the displaced workers. In addition, a phase-in schedule could actually reduce estimated job losses. The EPA estimates that on a national level, a five-year phase-in schedule would reduce the estimated job losses by 32 percent, due to normal attribution.⁴⁰

Although a phase-in period could provide industry an opportunity to ease the most difficult areas of transition--those of employment dislocation and the capital investment required for conversion to a returnable system, experience has shown that industry does not use "grace periods" between enactment of a beverage container law and its effective date to implement the changes necessary, but rather to fight for the law's repeal.⁴¹ Obviously this type of action should be avoided, as it does not aid the transition and represents additional expense. Once legislation is enacted, there should be strong penalty provisions to insure that the industry complies with the law.⁴²

E. Summary

Two reports of the employment impact of a mandatory deposit system in Maryland disagree substantially on the degree of such an impact.

Nevertheless, both reports indicate that although some jobs would be lost, the net effect would be an increase of 1,501 - 3,783 jobs. This indication of a net increase in employment is in accordance with every other state and federal study investigating this issue.

Projecting the impact on Maryland beverage-related industries is difficult because it is impossible to accurately predict the beverage container mix following the bill. In particular, the demise of the can under a mandatory deposit system is far from certain.

The present trend in beverage industries is one of continued consolidation and centralization--a trend which has been encouraged and supported by the use of non-returnable containers. The increased automation and mergers has led to a decline in employment levels within the beverage industry and this decline is likely to continue. A mandatory deposit system would arrest and possibly reverse these trends, by halting the trend towards centralization of the soft drink and malt beverage industries and by providing a net increase in the number of jobs available due to the labor-intensive characteristic of the returnable system.

Although phase-in periods have often been suggested as a means of easing employment dislocations and of spreading out the necessary capital investments, experience indicates that industry does not use the interim between enactment of a beverage container law and its effective date to implement the necessary changes. Instead, the related industries fight for a repeal of the law, thereby allocating further capital to a nonconstructive end.

CHAPTER V

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Footnotes

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35. "Throwaways Spell Monopoly", Environmental Action Bulletin (December 22, 1973), citing Peter Chokola, Chokola Bottling Company.
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40. John R. Quarles, Jr., Deputy Administrator, EPA, Testimony Before the Subcommittee on the Environment, Senate Commerce Committee, Regarding S.2062 (May 7, 1974), p. 12.
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CHAPTER VI: ECONOMIC IMPACT ON INDUSTRY AND GOVERNMENT

A. Maryland Economic Impact: An Overview

The economic impact of a mandatory deposit system on beverage prices and sales, consumer inconvenience and employment have been discussed in earlier chapters of this report. Necessary adaptation by the industry during a transition period is an important effect of mandatory deposit legislation. The only report to investigate the costs of implementing such a system in Maryland is from the Maryland Department of Economic and Community Development (DECD); therefore, this report has no comparative data for Maryland.

In quantifying the costs and benefits of a mandatory deposit system, Dr. Tawil of the DECD report first estimates the effects of such legislation on beverage prices and sales and on the container mix in Maryland.¹ In calculating all of these effects, he employs Vermont data and a quantification of the concept of consumer inconvenience. The accuracy and suitability of the Vermont data and also of the concept of consumer inconvenience are dubious and have been discussed in a previous chapter of this report (Chapter IV). In many cases, Tawil's high and unverified value for the inconvenience factor probably exaggerates the actual costs of a mandatory deposit system.

B. Soft Drink Bottlers

Table VI-1 presents a summary of the capital investments required by a system requiring a mandatory 5 cent minimum deposit with no restrictions on container type (Alternative III in the DECD report) as

TABLE VI-1

Comparative Economic Analysis of the Status Quo and Mandatory Deposit #2
System for Maryland Soft Drink Bottlers

<u>Total Capital Investment</u>	<u>Status Quo</u>	<u>5¢ Mandatory Deposit System</u>	<u>Costs/Saving Attributable to Mandatory Deposit System</u>
Total Capital Investment	- 2,620,218	-18,605,862	-15,985,644
Pre-tax Return on Investment (12 percent of total investment)	- 314,412	- 2,232,689	- 1,918,277
Depreciation	- 71,038	- 1,825,301	- 1,754,263
Labor <u>a/</u>	0	- 943,044	- 943,044
Containers	-60,118,884	-31,214,650	+28,904,234
Retained Deposits	+ 472,800	+ 4,728,000	+ 4,255,200
Packaging	- 3,720,148	- 1,077,038	+ 2,643,110
Other (Sterilizing, Labels, etc.)	- 197,000	- 2,604,340	- 2,407,340
Total Annual Costs <u>b/</u>	-63,948,682	-35,169,063	+28,779,619

* Costs to industry are indicated by negative amounts, savings by positive amounts.

a/ Based on DECD projections. See Chapter V of this report for discussion.

b/ Includes all costs listed except Total Investment.

compared to the status quo condition for soft drink bottlers. The two systems are compared using a given beverage sale level of 34.9 million cases of soft drinks per year (Tawil's estimate for sales under the status quo condition).³

Total capital investments include the costs of converting one-way bottle lines and new refillable bottle lines to replace the existing can lines that produce beverages sold in Maryland. Also included are estimated costs for additional space requirements, bottle floats, containers and container packaging. As containers represent a major cost to the bottlers, the refillable system would reduce these expenditures quite significantly. This reduction would depend on the container return rate, which Dr. Tawil predicts would be 87.3 percent; he anticipates a 90 percent return rate and allows for bottle breakage or damage.⁴ There would be an increase in savings under a mandatory deposit system in the form of "retained deposits"; that is, those deposits not refunded due to the estimated 10 percent of the containers which would not be returned. The cost of packaging would also be reduced under a refillable system, while other costs such as sterilization and labeling would increase.

Table VI-1 clearly indicates that a mandatory deposit system is far more economical than the status quo and would reduce annual costs of soft drink bottlers by \$29 million. Even including the initial capital investment costs of \$18 million, Maryland soft drink bottlers would save \$13 million in the first year alone under a mandatory deposit system.

C. Brewers

The DECD report indicates that the two breweries operating in Maryland both produce for regional markets. As only a small portion

TABLE VI-2

Comparative Economic Analysis of the Status Quo and Mandatory Deposit *5
System for Maryland Brewers

<u>Total Investment</u>	<u>Status Quo</u>	<u>5¢ Mandatory Deposit System</u>	<u>Costs/Savings Attributable to Mandatory Deposit System</u>
Total Investment	- 2,697,552	- 9,848,860	- 7,151,308
Pre-tax Return on Investment	- 323,712	- 1,181,856	- 858,144
Depreciation	- 173,088	- 1,692,592	- 1,519,504
Labor ^{a/}	0	- 154,000	- 154,000
Containers	-44,073,504	-18,257,868	+25,815,636
Retained Deposits	+ 345,600	+ 4,320,000	+ 3,974,400
Packaging	- 1,987,200	- 540,000	+ 1,447,200
Other (Sterilizing, Labels, etc.)	- 288,000	- 2,700,000	- 2,412,000
Total Annual Costs ^{b/}	-46,499,904	-20,206,316	+26,293,588

* Costs are indicated by negative amounts, savings by positive amounts.

a/ Based on DECD projections. See Chapter V of this report for discussion.

b/ Includes all costs listed except Total Investment.

of their total output is sold in Maryland and some of their lines are already for refillable bottles, they would be expected to incur minimal costs for additional equipment and space to supply their Maryland market with beer in refillable containers. Table VI-2 summarizes the costs and benefits of a mandatory deposit system as compared to the status quo. Beer sales were estimated to be 36 million cases per year for both systems (Tawil's estimate for beer sales under the status quo). The total capital investment for Maryland breweries includes \$700,000 for conversion of one-way bottle lines, additional equipment and space required, plus additional costs of inventory investment for containers and beer packaging materials.⁶ Costs of sterilizing, labeling, and delabeling and savings in retained deposits, containers, and packaging would be similar to those of the soft drink bottlers.⁷

During the first year under a mandatory deposit system, Maryland brewers would realize a savings of \$19 million in annual operating costs; thereafter such a system would mean a savings to Maryland brewer of approximately \$26 million annually (see Table VI-2).⁸

D. Distributors

Tawil reports that insufficient data was collected from the soft drink bottler questionnaires to estimate their distribution costs. He suggests that the distribution requirements for beer and soft drink are similar and therefore used data from beer distributors to estimate additional costs incurred by both beer distributors and soft drink bottlers to distribute their products under the mandatory deposit system.⁹

Tawil depended heavily on interviews conducted in Vermont, in predicting that distributors would have to add 50 percent more delivery

trucks to their existing fleets and would require at least 60 percent more warehouse space, plus an additional forklift.¹⁰ Thus, he estimates that beer distributors would require a first-year investment of \$4,233,900 for additional trucks and \$660,000 for additional forklifts. The increase in warehouse space translates into a first-year investment of \$5,179,153 for all Maryland distributors.¹¹ The additional land required for added warehouse space and delivery trucks was estimated to entail an investment of \$3,452,770 by Maryland beer distributors.¹² Other costs include depreciating inventory investment, labor, vehicle operating costs and freight costs. A table summarizing the comparative costs for both beer and soft drink distributors is presented below.

TABLE VI-3
Comparative Analysis for Distributors¹³

	<u>Status Quo</u>	<u>5¢ Mandatory Deposit System</u>	<u>Diff. (MDS-SQ)</u>
Beer	-25,093,044	-41,472,228	-16,379,184
Soft Drink	-20,495,643	-29,943,608	- 9,447,965

Although much of these costs represent capital investments (\$10 million and \$13 million for beer and soft drink distributors, respectively),¹⁴ Maryland distributors would obviously be faced with an increase in annual operating costs as well as major initial investment under a mandatory deposit system.

E. Beverage Retailers

Under a mandatory deposit system, retailers are forced to utilize additional space for beverages and beverage containers. The value of this additional storage is dependent on the question of space availability and, therefore, would vary considerably among individual retailers.¹⁵

Tawil estimated that the 1,239 supermarkets in Maryland would each require an additional 500 square feet of space, and that the other 4,125 stores would require an average of 250 square feet of additional space. Utilizing an annual cost rate of \$5 per square foot for supermarkets and \$3 per square foot for other retail establishments,¹⁶ Tawil computed the additional cost to be \$3,097,500 for supermarkets and \$3,093,750 for other establishments.¹⁷ While it is difficult to estimate the increased personnel needed by retail establishments under a mandatory deposit system, Tawil predicts a possible increase of labor to cost \$32 million for all retail establishments.¹⁸

The additional space needed by retail establishments would be dependent upon the container mix, especially the demise of the can under a mandatory deposit system (see Chapter V, Section B, of this report for discussion). Cans may maintain a greater portion of the beverage market than Tawil anticipates. Many consumers may continue to purchase their beverages in cans due to the convenience of such packaging, especially the convenience of returning such containers. Cans could be returned in a flattened or damaged condition, thereby reducing the amount of space required to store returned containers.

Other ways of reducing this space requirement for storing and labor requirement for sorting containers are available as mentioned earlier. These include a can crushing machine, use of standardized containers, and the creation of redemption centers to handle the empty containers. Another method to reduce the need for storage space would be to keep the returned containers in a fenced-in area outside the retail establishment. This would relieve space requirements within the establishment, lower the costs of the additional space required and

lessen any sanitation problems anticipated by the retailers.¹⁹ These methods would reduce the above costs considerably and the creation of redemption-recycling centers would particularly lessen the alleged "troublesome" nature of a deposit system on retail establishments.

Tawil reports that channeling empty containers to retailers and redemption centers that can process them at the lowest costs significantly reduce costs. The Vermont law moves towards this goal by requiring bottlers and brewers to pay the retailer or redemption center one cent for each container returned. Tawil reports the existence of beverage retail stores/redemption centers in Vermont which have proven to be profitable under such a system.²⁰

F. Container Manufacturers and Suppliers of Major Raw Materials

There are currently four firms in Maryland which manufacture metal beverage containers and one that manufactures glass beverage containers. It is difficult to predict plant closings and possible employment losses which might occur under a mandatory deposit system and naturally, the effects would be dependent upon the container mix (see Chapter V, Section B).

Tawil predicts a possible annual wage loss of \$13 million for container manufacturers in Maryland and an annual wage loss of \$4.6 million for the principal Maryland supplier of steel to the metal container manufacturers.²¹ Tawil's projection that cans would retain only 20 percent of the beer market and 23 percent of the soft drink market²² is far from certain, however, and these estimates of wage losses may be unduly large.

G. Capital Losses

Capital losses arising from mandatory deposit legislation would be experienced primarily by container manufacturers, suppliers of major raw materials to container manufacturers, and bottlers. Vending machines, can lines, rinsers on one-way bottle lines, metal container manufacturing equipment, some one-way glass container equipment, and some machinery used in the manufacture of tin plate are all examples of equipment for which there would be capital loss.²³

Possibilities for reducing these losses include utilizing equipment such as can lines for goods to be sold out of state, converting the equipment to process products other than beverages or beverage containers, and selling obsolescent equipment to overseas markets. Continental Can and other big U. S. canmakers are known to use the rest of the world as an outlet for production equipment no longer needed here.²⁴ Not fully recognizing the potential for sale of equipment to out-of-state and overseas markets, Tawil probably overstates the loss when he states that \$23,722,910 is the appropriate figure for total capital loss under a mandatory deposit system.²⁵

H. Discussion

The uncertainty involved in predicting the variables, particularly container mix, which Tawil employs in his base equations and which in turn, affect all his further predictions, should be noted. The experience of other states indicates that the total effects of the cost elements involved with the changeover in operations, are greatly dependent upon return rates and new containerization patterns. Although return rates have been shown to increase under a mandatory deposit system,²⁶ the resulting containerization patterns are impossible to predict, as already

noted in Chapter V. An extensive study by the Michigan Public Service Commission concludes: "The passage of a 'Bottle Bill' results in new capital investments in several industry segments. It is extremely difficult to estimate exactly the nature and extent of this investment."²⁷

The fact that Tawil utilized information obtained from questionnaires sent to container manufacturers, brewers, soft drink bottlers and distributors, but reported that the information received from retail establishments "would be too speculative to use"²⁸ raises serious questions concerning how one rates the speculative nature of any information provided by the industry sectors. One general problem of obtaining information on the effects of a mandatory deposit system is that one must request data from industry, which is far from an unbiased source in this issue²⁹ and often cannot provide sources for their data, given the competitive nature of the industry.

Tawil's study represents an investigation of transition costs, or costs of changing a non-refillable system to a refillable system. It is not an analysis of the comparative costs of a non-refillable versus refillable system. Tawil does not account for a possible phase-in period. If given notice that legislation is forthcoming, industries would have the opportunity, when building new lines or replacing old lines, to install lines for refillable containers. This would greatly reduce the initial capital investments to the industry.³⁰ Economist Lloyd Orr warns that the focus on transitional difficulties "can and sometimes does lead to conclusions that are narrow and limited to short-run conclusions... A concentration on transition costs at the expense of long-run efficiency in connection with specific innovations can significantly warp the analysis."³¹

A bottle bill, in order to achieve its goals, requires adaptation by all sectors of the beverage container industry. The same type of capital investment was required, however, when the industry switched to the throwaway system--a trend which the industry initiated and voluntarily pursued. Where mandatory deposit laws exist, the industries have adapted successfully.³²

I. Oregon

Although the beverage industry in Oregon and Maryland is not directly comparable, the economic impact of Oregon's bottle bill on the various segments of the industry may be helpful in considering the probable economic changes which the corresponding segments would face in Maryland.

1. Operating Income

The table below summarizes the changes in operating income of Oregon's beverage-related industries following the implementation of the bottle bill.

TABLE VI-4
Changes in Operating Income in 1973³³
Due to the Bottle Bill

<u>Industry</u>	<u>Change in Operating Income</u>	<u>Direction of Change</u>
Glass Bottle Manufacturers	\$ 264,000	decrease
Can Manufacturers	350,272	decrease
Malt Beverage Brewers	5,328,383	increase
Malt Beverage Distributors	589,000	decrease
Soft Drink Bottlers	2,764,675	increase
Retailers	2,945,825	decrease
Total Change for all Industries	\$3,943,961	increase

The shift to refillable bottles and the accompanying increase in return rate accounted for substantial savings to malt brewers and soft drink bottlers, who no longer found it necessary to buy large quantities of containers. These gains more than offset increased costs for warehouse space and labor, truck and driver labor, and the increased costs of washing, shipping, sterilizing and handling.³⁴

Malt beverage distributors experienced increased operating costs due to the greater weight and increased handling required of returnables, with increased costs averaging less than \$5,000 per distributor. Retailers also experienced increases in labor and storage costs. Gudger and Bailes of Oregon State University, conclude that the overall economic impact for all industries was an almost \$4 million increase in operating revenue.³⁵

2. Capital Losses and Changeover Costs

All industry segments, with the exception of the can manufacturers reported zero or insignificant capital losses. This was due to the transferability of physical capital (e.g. vending machines) or capital usage (e.g. use of can lines for beer sold in markets adjacent to Oregon).³⁶ At the time of the Oregon State report, capital losses for equipment used solely for canning soft drinks had not yet been realized. The largest of these possible capital losses would involve the \$600,000 book value of canning equipment by Emerald Canning Company. Total changeover costs were estimated to be \$174,627, with soft drink bottlers and retailers accounting for \$75,000 and \$99,627 respectively.³⁷

3. New Investment

The Bottle Bill resulted in new capital investments in several industry segments, but it is not possible in all cases to determine the

portion of actual increased investment that was necessitated by the bill. New investments included returnable bottle floats for brewers; truck and bottle handling equipment for beer distributors; returnable bottle floats, trucks, bottle washing and filling equipment for soft drink bottlers and bottle sorting and handling equipment for retailers. The total new capital investment was estimated to be \$5.35 million.³⁸

J. Vermont

Unfortunately, no comprehensive data are available on the costs of production, investment or profit changes in Vermont as a result of the law.³⁹ The fact that Dr. Tawil based many of his assumptions on the Vermont experience therefore detracts from the credibility of his findings.

K. Cost of Resistance

Another cost to consider is that which the beverage-related industries collectively assume whenever a bottle bill is introduced in a legislature or put on a ballot by referendum. The industries have demonstrated a strong preference to spending exorbitant amounts of money in attempts to prevent the implementation of bottle bills, rather than investment of such money towards the changes necessary to facilitate a mandatory deposit system.

While proponents of bottle bills also expend money for their campaign for the passage of beverage legislation, their money is obtained directly from public contributors, and intended use is clear. The beverage industry's expenditures are derived from their profits or from elevated consumer prices. Consumers opposed to throwaways cannot resist this cost by buying returnables, because they often are unavailable.

The expenditures for recent campaigns in four states have been reported by Thomas Love of the Washington Star. In Michigan, an estimated

\$1 million to more than \$3 million was spent in the state by the beverage container, brewery and soft drink industries; \$100,000 was spent by the referendum bookers.⁴⁰ Of the 1.3 million which was raised by the Committee Against Forced Deposits in Michigan, only \$205,534, or slightly more than 15 percent, was raised within the state. Big national breweries and out-of-state glass and can manufacturers contributed the remainder according to reports on file with the Secretary of State's Office.⁴¹ The 1.3 million figure of the Committee was probably matched by an equal amount from other business interests who spent money on their own trying to defeat the bottle bill proposal.

In Maine, \$350,000 was spent by the opponents with 72 percent of this amount coming from out-of-state sources; \$24,000 was spent in this state by the proponents of beverage container legislation. The pattern was similar in Colorado with \$500,000 and \$10,000 being spent by the opponents and proponents, respectively. In Massachusetts, an estimated \$1.4 million was allocated by the opponents; \$40,000 by the proponents.⁴² Industry outspent the proponents by more than thirty to one in this state. If mandatory deposit legislation was enacted in Maryland, money spent by industry resisting such legislation through lobbying and litigation could be saved and utilized for capital investment necessitated by the legislation.

L. Tax Impact

The DECD report offers rough approximations of the impact of mandatory deposit legislation to state and local tax revenues, noting that a precise assessment of this impact is impossible. In turn, Tawil's predictions are based on the assumption that both the price and quantity of beverages

sold would be altered by mandatory deposit legislation. Earlier sections of this report indicate, however, that although a slight drop in sales may occur during the first year following the law's implementation, there is no reason to expect a significant drop in sales due to a mandatory deposit system. In addition, it should be noted that Tawil's predicted sales have been derived, in part, from the customer inconvenience factor based on the Vermont experience and, therefore, his predictions for sales are unfairly deflated and highly questionable.

It is important to remember the questionable nature of these base equations which affect most of Tawil's predictions. While the DECD report can serve as an indicator of the direction of tax impact, it cannot be accepted as a reliable source for quantitative predictions.

The following table summarizes Tawil's projections of state and local tax impact under an Oregon-type bill:

TABLE VI-5
State and Local Tax Impact ⁴³
(Dollars)

Sales Tax	- 584,470
Excise Tax	-1,114,453
Personal Income Tax	324,159
Corporate Income Tax	<u>62,323</u>
Total	-1,312,441
Capital Loss Effect	- 558,675

Tawil indicates that sales tax revenues would be affected, as he expects both the price and quantity of beer and soft drinks would be changed by mandatory deposit legislation. He estimates that sales tax revenues would decline from status quo levels by \$1,524,000 for beer and \$813,880 for soft drinks. Total sales tax revenues would not decline by these amounts since reduced expenditures on these beverages would

leave consumers with more income to spend on other goods and services, some of which would be taxable. Tawil therefore suggests that 25 percent of the total decline in sales tax revenues from beer and soft drinks may indicate the amount which would be permanently lost.⁴⁴

A major revenue loss is predicted by the DECD report due to fewer beer excise tax collections. This is derived from Tawil's estimated demand for beer and the likelihood that only a relatively small proportion of his predicted decline in beer sales will be shifted to other goods upon which the state collects excise tax.⁴⁵

Due to the employment and wage changes resulting from a mandatory deposit system, Tawil indicates that state revenues from personal income tax would also be affected and estimated that total state and local personal income tax collected would increase by \$324,159.⁴⁶ State corporate income tax collections would also increase due to the changes in the level of investment of the beverage industries. According to Tawil, these tax collections are estimated to increase \$62,323 under mandatory deposit legislation.⁴⁷ Finally, Tawil predicts a one-time loss of corporate income tax revenues to the state, amounting to \$558,675 due to capital losses.⁴⁸

In contrast to these figures, a report issued by the Governor's Council of Economic Advisors indicated that the State of Maryland could expect to collect about \$450,000 additional from the personal income taxes and about \$225,000 additional from the state taxes on this additional income, for a total of an additional \$675,000 in state revenues from the additional employment of a mandatory deposit. The local jurisdictions would receive an additional \$225,000 from their local income taxes.⁴⁹

Obviously any estimates of tax effects are dependent upon the extent of numerous other changes resulting from a mandatory deposit law. While there might be a slight drop in sales the first year, creating a decrease in sales tax and excise tax collections, personal and corporate income tax can be expected to increase due to the increased employment under such a system.

M. Summary

It is difficult to estimate the impact of mandatory deposit legislation on the beverage industries. The total effects of the cost elements involved with the necessary changeover in operations are greatly dependent upon many other variables, including container return rates and new containerization patterns.

Soft drink bottlers and brewers in Maryland would benefit from a mandatory deposit system, saving \$29 million and \$26 million, respectively, in annual operating costs. These savings far exceed the first year capital investments required by such a system and are attributable to the significant reduction in expenditures for beverage containers. Conversely, Maryland soft drink and beer distributors would acquire additional costs amounting to \$16 million and \$9 million, respectively, under a mandatory deposit system. Although much of these costs represent capital investments, there would be some increase in annual operating costs due to increased warehouse space, trucks, inventory costs, etc. Beverage retailers could also anticipate an increase in annual operating costs of \$38 million due to the additional space and labor required. The creation of redemption centers, which have proven to be profitable businesses in Vermont, could significantly reduce these costs. Depending

upon the demise of the can under a mandatory deposit system, container manufacturers and suppliers of major raw materials, an annual wage loss of 17.6 million and capital losses of \$24 million could occur.

While adjustment in some segments of the beverage industry may be difficult, an analysis of the available data leads to the conclusion that industry should be capable of responding to the mandatory deposit system of dealing with the beverage container problem.

The exorbitant amounts of money spent by the beverage industries in recent referendums of other states were also discussed. If mandatory deposit legislation was enacted in Maryland, such expenditures would be avoided. Such money would be better utilized for the capital investment necessitated by a mandatory deposit system.

Mandatory deposit legislation would affect state and local tax revenues. A precise assessment of this impact is impossible and any estimates are dependent upon the extent of numerous other changes resulting from a mandatory deposit law. While there might be a slight drop in sales the first year, creating a decrease in sales tax and excise tax collections, personal and corporate income tax can be expected to increase due to the increased employment under a mandatory deposit system.

CHAPTER VI

Footnotes

1. Jack J. Tawil, Maryland Department of Economic and Community Development. Social Costs of Beverage Containers: An Economic Analysis of Six Legislative Solutions for Maryland (March, 1976), p. III-1.
2. Figures derived from Table IV-3, p. IV-15, DECD Report (Tawil).
3. Tawil, op. cit., Table III-6, p. III-21.
4. Ibid., p. IV-10.
5. Figures derived from Table IV-4, p. IV-19, DECD Report (Tawil). Figures for costs to out-of-state brewers which serve the Maryland market are not included in this table.
6. Tawil, op. cit., p. IV-14.
7. Ibid., p. IV-19.
8. Even if costs to out-of-state brewers are included, a savings in annual costs of \$25 million and a net savings (annual costs and initial investment costs) of \$15 million would be realized by all brewers serving the Maryland market.
9. Tawil, op. cit., p. IV-20.
10. Ibid.
11. Ibid., p. IV-21.
12. Ibid.
13. Figures derived from Table IV-6, p. IV-27, DECD Report (Tawil). Sales of 39.4 millions of cases for soft drinks and 36.0 millions of cases of beer were used to calculate the costs of both systems.
14. Tawil, op. cit., Table IV-12, p. IV-45.
15. Ibid., p. IV-29.
16. Ibid.
17. Ibid., p. IV-30.
18. Ibid., Table IV-8, p. IV-31.
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21. Ibid., pp. IV-37-38.
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23. Ibid., p. IV-39.
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34. Ibid., p. 43.
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42. Love, op. cit.
43. Tawil, op. cit., Table IX-5, p. IX-13.
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45. Ibid.
46. Ibid., p. IX-11.
47. Ibid., p. IX-13.
48. Ibid., p. IX-10.
49. Ted Scheinman, Governor's Council of Economic Advisors, Mandatory Deposit Legislation for Beer and Soft Drink Containers in Maryland: An Economic Analysis (March 19, 1975), p. 41.

CHAPTER VII: ENERGY *

A. Introduction

Due to the growing awareness of the depletion of our non-renewable fuels and the national goal of "energy self-sufficiency", any and all areas of possible energy savings have come under close scrutiny. A recent Environmental Protection Agency report found that the container industry is responsible for 0.6 percent of total U. S. energy consumption and that 57 percent of that figure (or slightly more than 3 percent of the nation's primary energy) could be saved by a switch to a total returnable/refillable bottle system. This figure represents 244 trillion Btu's, or a savings equivalent to 115,000 barrels of oil per day or 42,000,000 barrels of oil per year.¹

The Oregon Environmental Council calculated an annual 1,320 billion Btu savings in Oregon as a result of the Bottle Bill. This is equivalent to enough energy to heat 11,000 homes, or slightly over 2 percent of Oregon's population.² No calculated energy savings were found for Vermont.

Dr. Jack Tawil of the Department of Economic and Community Development has completed a thorough energy impact analysis which focuses on the national impact of mandatory deposit legislation in Maryland rather than the energy impact on Maryland firms alone. He aptly notes that the total energy requirements will depend upon the total beverage sales and container mix (see Chapters III and V of this report). Energy is required

* As energy represents the most vital natural resource, this chapter will discuss solely the energy requirements of beverage systems. Other natural resources will be discussed in the following chapter, "Natural Resource Impact".

in most facets of the beverage system including (1) production of the materials from which containers are manufactured, (2) production of the container, (3) the filling and shipping of the containers to retailers, (4) packaging of containers in multi-unit packs and (5) shipment and processing of empty containers for refilling, recycling or disposal, (6) transportation between the above stages, and (7) the manufacture of closures, labels and secondary packaging.³

To simplify his analysis, Dr. Tawil omitted the energy consumed in the manufacture of supplementary materials if those materials aggregated to less than 5 percent of the container's weight. He also assumed the national average energy expenditure of 10,716 Btu's per kilowatt hour for most Maryland beverage industries. Trippage rates were calculated to be 10 for beer, 5 for soft drinks under the status quo and 10 for both beer and soft drink under a mandatory deposit system.⁴

B. Present Container Systems in Maryland

1. Bimetal Can

The three-piece bimetal can made from virgin materials dominates the Maryland beer and steel can market. Packaging (including container) represents 94 percent of the total energy consumed by this system. Thirty-one percent of the total energy consumed by this system is natural gas, 17 percent is petroleum.⁵

2. Aluminum Can

The two-piece aluminum can is also sold on the Maryland market although no aluminum containers are manufactured within the State. With a 100 percent virgin aluminum system, container and packaging consume 96 percent of the total energy; 34 percent of that total is derived from

natural gas and 24 percent from petroleum. If a 100 percent recycled aluminum system could be implemented, those energy needs for each unit delivered to the consumer could be reduced by two-thirds.⁷

3. Nonrefillable Glass

Under a non-refillable glass system, packing represents 90 percent and 91 percent of the total energy requirements for beer and soft drink containers, respectively. In both systems the percentage of total energy derived from natural gas and petroleum is higher in nonrefillable bottles than cans, with approximately 45 percent of the total energy from natural gas and 35 percent from petroleum.⁸

4. Refillable Glass

Tawil estimates the status quo trippage rates to be 10 for beer, 5 for soft drinks. Beer bottles have a higher trippage rate because 85 percent of all beer distributed in refillable bottles is sold to bars and taverns for on-premise consumption, thereby yielding a high return rate.⁹ With the 5-trip refillable soft drink bottle, container and packaging represents 81 percent of the total energy requirement, filling and washing represent 10 percent and distribution 8 percent. Natural gas accounts for 47 percent of the total energy requirement; petroleum accounts for 30 percent of the total.¹⁰

Container manufacturing and packaging accounts for only 66 percent of the total energy requirements of a 10-trip beer bottle system, transportation for 26 percent, and filling for 8 percent. Of the total energy, 44 percent is derived from natural gas and 30 percent from petroleum.¹¹

5. Comparison of Systems

Container manufacturing and packaging represents the largest percentage of the total energy costs of any container system, ranging from 66 percent for the 10-trip beer bottle system to 96 percent for the aluminum can. The energy savings attributable to refillable systems are due to this difference in the energy requirements for packaging. While transportation energy requirements are greater in returnable systems, these requirements are small when compared with manufacturing costs.

Natural gas and petroleum are the main sources of energy for beverage container systems. If a mandatory deposit law was enacted, much of the energy saved would be in the form of natural gas.

C. Intervening Factors

The one-way beverage container system is energy intensive; the refillable system is labor intensive. The total energy used by each system is dependent on the trippage rates (how many times a bottle is returned for refilling) for refillable containers and on the recycling rate for throwaway containers. The energy savings attributable to a refillable system result from bypassing most of the mining and manufacturing operations necessary to produce a new container. In a refillable system the energy costs of manufacturing and delivering a new glass bottle to the beverage producer are spread over the number of trips the bottle makes before it is lost or broken. Other energy requirements, such as washing, filling, and transportation remain constant for each trip. With recycling, most of the mining and some of the manufacturing operations are bypassed, but the container material has to be recovered, returned and remanufactured.^{12, 13}

Most studies employ the conservative trippage figure of 10 when analyzing costs and energy requirements. Numerous sources indicate, however, that an appropriate national average for trippage rates is probably between 15 to 20 trips per container. The 1970 edition of Glass Containers states that the national average number of trips made by returnable soft drink bottles was 19; returnable beer bottles was 20.¹⁴

While Dr. Tawil employs trippage figures of 10 for both soft drink and beer systems under a mandatory deposit system, an EPA study found that refillable bottles making only three trips require less energy than any of the three popular throwaway containers--the aluminum can, nonrefillable glass, and bimetal cans. At 7 to 8 trips, a refillable bottle consumes less energy than any container type.¹⁵ (See Figure VII-1 for the Impact of Trippage on Energy Consumption¹⁶).

As previously mentioned, energy requirements of nonreturnable beverage containers are affected by their recycling rate. The most significant energy savings occur in recycling aluminum, which offers the opportunity to reduce energy requirements by up to 66 percent.¹⁷ However, this recycling rate must reach 95 percent to compare to the low level energy use of refillable bottles. (See Figure VII-2 for the Impact of Container Recycling on Energy Consumption¹⁸). An energy savings of 39 percent could be realized by recycled steel¹⁹, but the industry has not yet began any appreciable recycling program. In contrast, a nonrefillable glass system which depended entirely on recycled glass would require 23 percent more energy than the normal manufacturing process which uses virgin materials and cullet (crushed scrap glass). In addition, the popular "glassphalt" suggestion for

Figure VII-1 16
Impact of Trippage (Refilling) on Energy Consumption

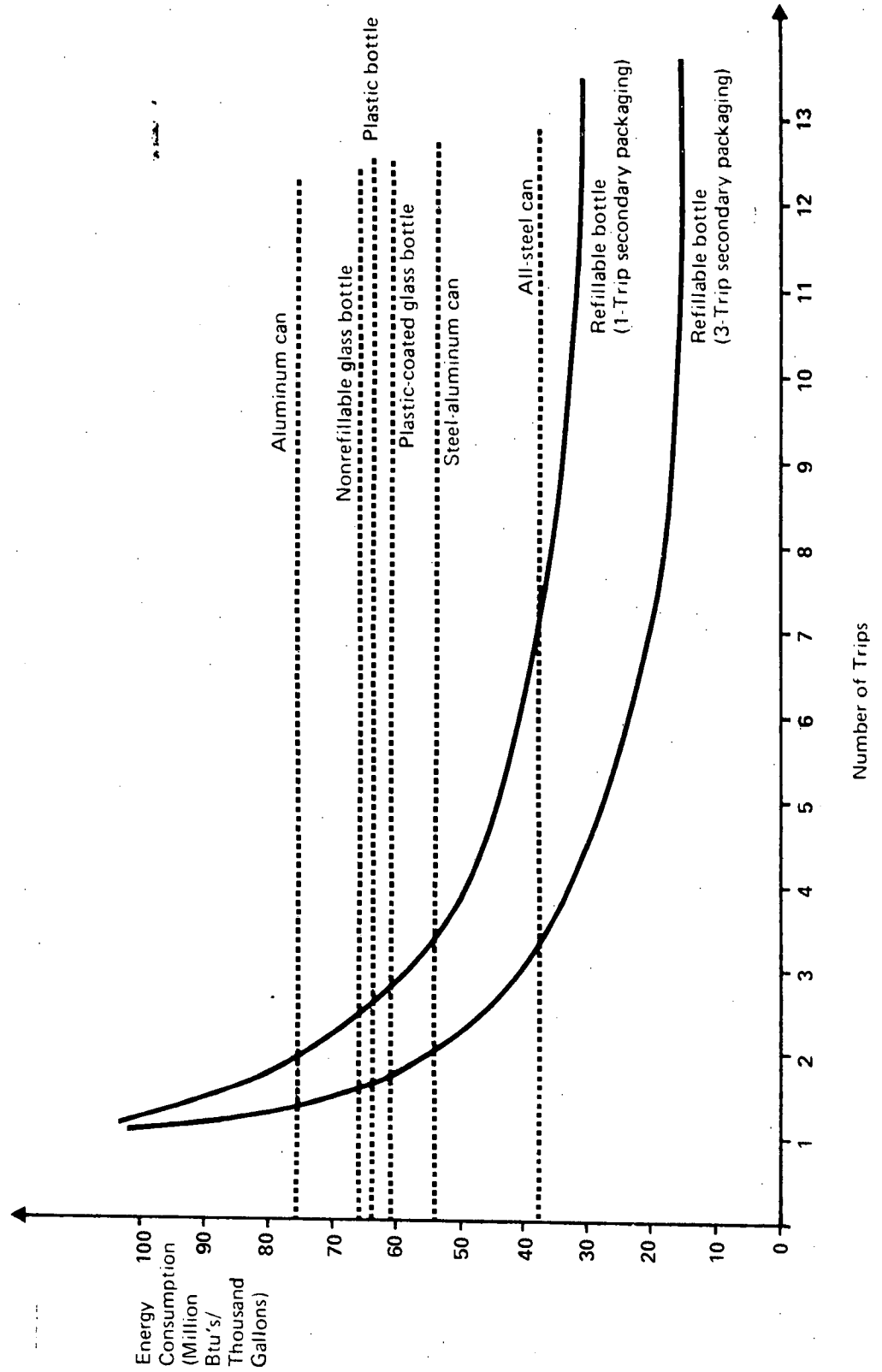
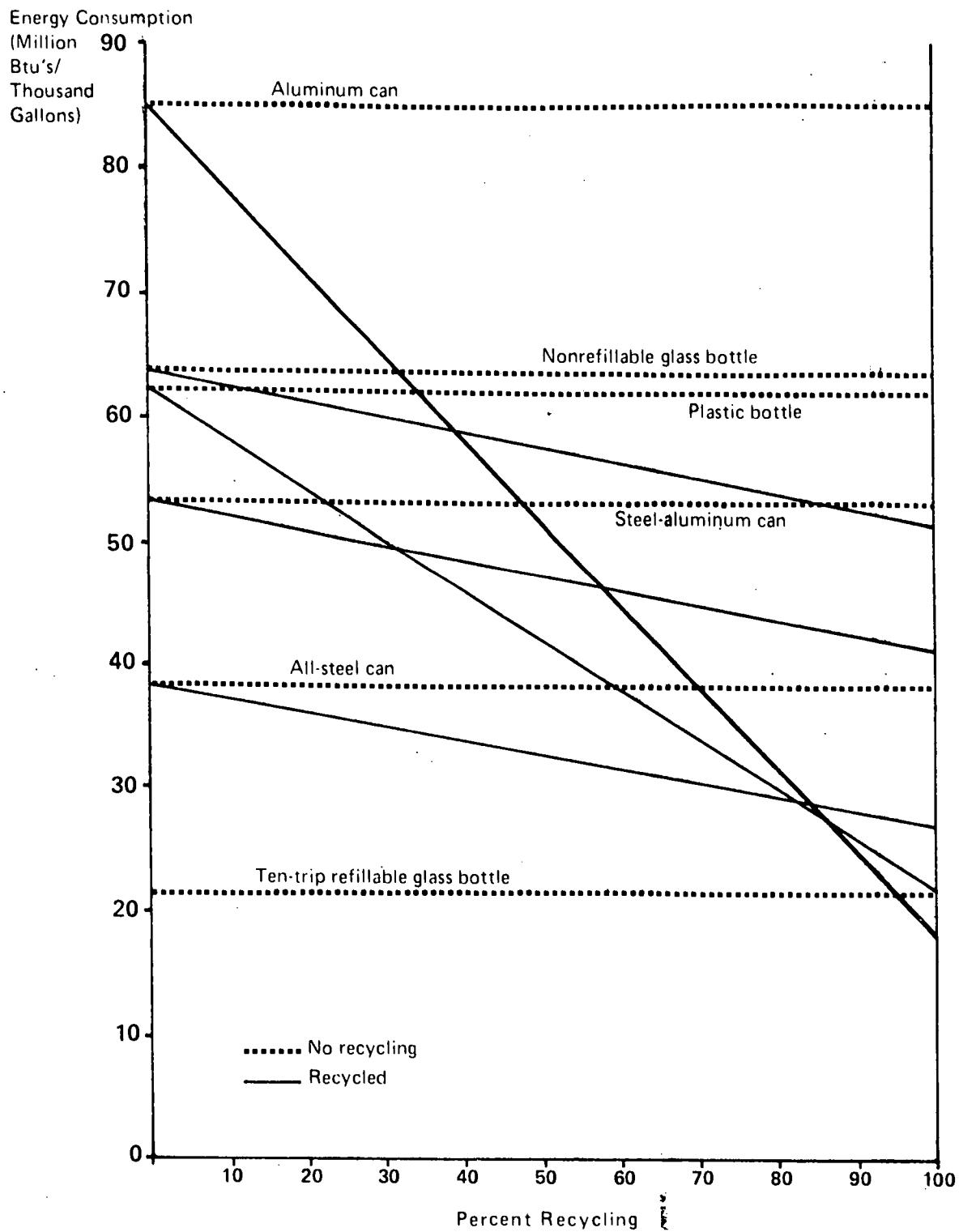


Figure VII-2 18

Impact of Container Recycling on Energy Consumption



recycled glass from discarded bottles require 30 times more energy than does the use of crushed stone.²⁰ In his Maryland analysis, Tawil had calculated 17 percent recycling for aluminum, 0 percent for steel and glass, reflecting the current state situation.²¹

D. Energy Impact on Maryland

After detailed analysis, Tawil concludes that "refillable systems are shown to be substantially more energy saving than nonrefillable ones". Using 1975 figures, Tawil estimates that the nonrefillable system uses two to four times more energy than does the refillable system. Assuming that a refillable bottle system with a trippage rate of 10 for beer and 5 for soft drinks uses 1 unit of energy per container use, Table VII-1 shows the amounts of energy per container use for all other container systems.

Table VII-1

COMPARATIVE ENERGY REQUIREMENTS OF CONTAINER SYSTEMS²²

Refillable Glass Beer Bottle (trippage 10)	1.00
Refillable Glass Soft Drink Bottle (trippage 5)	1.00
Throwaway Glass Beer Bottle	2.45
Throwaway Glass Soft Drink Bottle	3.08
Bimetal Beer Can	2.57
Bimetal Soft Drink Can	2.97
17% Recycled Aluminum Beer Can	3.74
17% Recycled Aluminum Soft Drink Can	4.32

It is evident from this table, that even with recycling, aluminum containers use the most energy per use and refillable bottles the least. Tawil reports that even when assuming a 100 percent recycling rate,

aluminum cans remain more energy demanding than any other system.²³ Moreover, it is doubtful that recycling rates even approaching 100 percent could be attained without some incentive to have consumers return containers, i.e. mandatory deposits.²⁴ Indeed, the Federal Energy Administration reports that in Oregon, under a mandatory deposit system, 70 percent of all cans are returned.²⁵

Bimetal cans use less energy than do aluminum cans, but considerably more than all steel cans or refillable glass bottles. Of the metal containers, the all steel can is the smallest user of energy and much of the differentiation between bimetal and all steel cans is due to the aluminum lid of bimetal containers.²⁶

Tawil also reports that an increase in trippage rates to 20 would reduce energy requirements of the refillable system by approximately 25 percent. On the other hand, even a substantial change in recycling rates would not significantly affect the container ranking.²⁷

Tawil reports that the overall energy consumption of the current beverage container system is 112 billion Btu's for every million cases of beverages. A five cent mandatory deposit system would require only 59 billion Btu's for every million cases of beverages, a savings of 53 billion Btu's per million cases when compared to the status quo.

Tawil's predictions of total energy requirements and savings by both industry sectors and types of energy are summarized in Tables VII-2²⁹ and VII-3³⁰, respectively. A mandatory deposit system would save more than 4 trillion Btu's annually. Unfortunately, these energy requirements are for differing sales volumes, as Tawil allows for a slight drop in beverage sales during the first year of a mandatory deposit system. These tables illustrate the fact that a 5 cent mandatory deposit system would

Table VII-2 ²⁹TOTAL ENERGY REQUIRED BY EACH SYSTEM
(million Btu's)

	<u>Status Quo</u>	<u>5¢ Mandatory Deposit System (MDS)</u>	<u>Savings Attributable to MDS</u>
Beer	3,862,762	1,821,956	2,040,806
Soft Drink	4,562,812	2,306,181	2,256,631
Total	8,425,574	4,128,137	4,297,437

Table VII-3 ³⁰ENERGY REQUIRED BY ENERGY SOURCE
(million Btu's)

	<u>Status Quo</u>	<u>5¢ Mandatory Deposit Legislation (MDS)</u>	<u>Savings Attributable to MDS</u>
Natural Gas	3,223,175	1,575,157	1,648,018
Petroleum	2,269,116	1,344,403	924,713
Other	2,947,841	1,455,537	1,502,304
Total	8,440,132	4,375,097	4,065,035

reduce the energy usage of the beverage industry by approximately 50 percent. Even when including the first-year energy requirement for float increases, energy requirements under mandatory deposit measures were still substantial as compared to the status quo.³¹ Ted Scheinman of the Governor's Council of Economic Advisors predicted that a mandatory deposit system could save 30 percent of the ten trillion Btu's used by the beverage container industry in Maryland each year. This is roughly equivalent to enough energy to heat 32,700 homes in Maryland for a year.³²

In short, Tawil found that a mandatory deposit system would realize very substantial energy savings and he estimated these savings by utilizing equilibrium prices, to be \$10,162,587 under a five cent mandatory deposit law. He noted, however, that the equilibrium prices fall short of reflecting the true social value of this energy savings which could be much greater in the near future.³³

E. Summary

Studies investigating the energy impact of mandatory deposit legislation have consistently shown that refillable container systems are the less demanding of our energy resources. Packaging represents the largest percentage of total energy costs of any container system. By spreading out those costs over a number of container fillings, the refillable system requires the lowest amount of energy when compared to any other container system.

While increased trippage rates can effectively reduce the savings attributable to a refillable system, increased recycling does not significantly affect the rate of energy-intensity. Dr. Tawil's analysis indicates that approximately 4 trillion Btu's could be saved annually

under a Maryland five cent mandatory deposit law, reducing the energy requirements of the beverage industry by approximately 50 percent. Most of these energy savings would be in the form of natural gas and petroleum. While the social value of this energy savings is difficult to quantify, estimates based on equilibrium prices of fuels alone indicate a monetary savings of at least \$10,162,587 annually under a five cent mandatory deposit law.

CHAPTER VII

FOOTNOTES

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3. Jack J. Tawil, Maryland Department of Economic and Community Development, Social Costs of Beverage Containers: An Economic Analysis of Six Legislative Solutions in Maryland (March 12, 1976), p. VIII-10.
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6. Ibid., p. VIII-11.
7. Ibid., Table VIII-2, p. VIII-17 and pp. VIII-14, 16.
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16. NY Task Force Report, Figure 5-1, p. 80.
17. Tawil, op. cit., p. VIII-12.
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19. "A federal label on 'bottle bills'", Business Week, (February 21, 1977), p. 85.
20. Lowry et. al., op. cit., p. 71.
21. Tawil, op. cit., p. VIII-12.
22. Ibid., p. VIII-23.
23. Ibid.
24. NY Task Force Report, pp. 79, 80.
25. F.E.A. Study, p. 10.
26. Tawil, op. cit., p. VIII-23.
27. Ibid.
28. Ibid., Tables VIII-15 and 18, pp. VIII-33 and 36.
29. Ibid., Tables VIII-21, p. VIII-40.
30. Ibid., pp. VIII-26, 37.
31. Ibid., p. VIII-38.
32. Ted Schienman, Governor's Council of Economic Advisors, Mandatory Deposit Legislation for Beer and Soft Drink Containers in Maryland: An Economic Analysis (Annapolis, Maryland: March 19, 1975), p. 27.
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CHAPTER VIII: NATURAL RESOURCE IMPACT*

A. The Problem: An Overview

Between 1959 and 1969 on a per capita basis, consumption of the contents of beverage containers rose 29 percent, while that of the materials used in manufacturing them increased 164 percent. The increased use of disposable, non-returnable glass, steel, and aluminum beverage containers was the main cause of the large increase in use of materials.¹ Although the impact on most of the materials used in beverage container manufacture is primarily of national concern, the expenditure of energy and the non-renewable resources used in its production at a time when energy resources tend to be in short supply make it imperative that the State of Maryland consider the long-range implications of the problem.

According to EPA estimates, in 1972, the manufacture of 8.8 million tons of beer and soft drink beverage containers required 6.2 million tons of glass, 0.6 million tons of aluminum, and 2 million tons of steel.² These quantities correspond to 44.9 percent (glass), 5.6 percent (aluminum), and 2 percent (steel) of the entire U. S. production of these materials.³

In general, cries for reduced materials consumption and more efficient resource utilization usually result from either: (1) concern

* In this section, the terms "natural resources" refers to those raw materials used in manufacturing the glass, steel, and aluminum containers, although quantities will be expressed in terms of finished materials. Land as a non-renewable resource is not treated and the energy resources used in manufacturing processes are treated separately.

over exhaustion of all world resources when ready substitutes do not exist; (2) fear of embargoes of raw materials by "cartels" when resource distribution is concentrated in only a few countries; or (3) the severe economic impacts caused by the effect of rising prices.⁴

While a reduction of materials consumption can result from recycling of glass and metal containers to obtain metal, energy considerations dictate that reuse by refilling of glass bottles and recycling of metal cans are the preferred means to conserve natural resources. In the case of bottle refilling, the raw material extraction and processing stages of production, as well as materials and container fabrication are avoided. With can recycling the raw materials extraction and processing steps are greatly reduced, and a reduction of energy needs in the refined materials processing steps occurs. In addition, a returnable beverage container system acts as its own recycling system and offers an efficient alternative to the current recycling systems which are dependent upon the voluntary effort of consumers.⁵

The extent of the impact on natural resources depends on several factors which serve to control the actual consumption of raw materials. Among these are the mix of beverage container types (percentage of various container types), the return rate of bottles for refilling, the amount of recycling of metals and glass, and the extent of use of large scale resource recovery systems for the reclamation of materials from mixed solid waste.*

* See references 6 and 7 for estimates of these effects on energy consumption.

With the growth of the use of one-way beverage containers during the 1960's, raw materials and the energy sources required for the manufacture of these containers were in abundant supply, so that there was no impetus toward the conservation of resources. However, since that time shortages in the raw material supply have been experienced in the manufacture of glass (soda ash), cans (aluminum and steel production), along with energy shortages (oil and natural gas).⁸

B. Aluminum

A continuing concern has been the waste of aluminum associated with one-time use beverage containers. The recent recycling efforts of the aluminum industry tend to support the concept that we can no longer afford to waste a valuable resource like aluminum.⁹

Although aluminum is one of the most abundant elements in the earth's crust, much of the bauxite (8 percent of the earth's crust) and alumina is of such low grade concentration that it is not readily available without new energy-intensive technology. The U. S. currently imports 85 percent of its alumina and bauxite.¹⁰ By the year 2000, the U. S. demand for aluminum will exceed U. S. ore reserves by an estimated 252 million tons of aluminum metal with the resulting increasing dependence on overseas supplies.¹¹

During 1973 and 1974, scarcity of aluminum supplies and the Mideast oil embargo aroused fears of similar "cartels" being formed to restrict the supplies of bauxite to industrial nations.¹² By summer 1974, rising aluminum prices and shortages were exacerbated by Jamaica's announcement of higher taxes and royalties on bauxite exports, which make up 60 percent of U. S. bauxite imports.¹³

These factors have resulted in aluminum production cutbacks and rising prices. Rising prices for can body sheet aluminum have made refillable bottles used only once cheaper than aluminum cans.¹⁴ There has been industry speculation that the aluminum beverage can may disappear within the next decade. In the case of aluminum, international and economic pressures add to the necessity of seeking reuse and recycling options to limit consumption of raw materials.¹⁵

C. Recycling of Aluminum

According to EPA reports, between 1973 and 1974 the quantity of aluminum beer and soft drink cans recycled had increased from 30 to 50 thousand tons annually.^{16,17} This increase reflects a growth in the amount of aluminum cans recycled from 7 to 11 percent of total aluminum beverage cans discarded. According to recent industry reports, over 58,000 tons of aluminum were collected for recycling in 1976 by the Reynolds Aluminum Recycling Company. Although 64,000 tons are projected for recycling in 1977, actual collections have exceeded projections in recent years. Nationally, 6 percent of the total primary source capability of the Reynolds Metals Company is provided by the aluminum reclaimed by the Reynolds Aluminum Recycling Company.¹⁸

According to Henry Lancaster, Manager of the Washington D.C. area Reynolds Aluminum Recycling Center in Alnham, Maryland, over 1.45 million pounds of aluminum were reclaimed through the Alnham Center during 1976 from a region including Maryland, the District of Columbia, northern Virginia, and parts of Delaware and Pennsylvania. Of this total, 565,904 pounds of aluminum were recycled in Maryland--423,379 pounds from mobile paystops; 93,908 pounds through the Alnham Center;

24,617 pounds from various beer distributors; and 24,000 pounds of miscellaneous aluminum scrap.¹⁹ Besides the aluminum cans, foils, t.v. trays, etc., other sources include defective can scrap and aluminum bottle closures retrieved from distributors and fillers. At this time, one filler/distributor plant in Maryland has already purchased equipment for removing the screw-on closures from returnable bottles and other plants are contemplating similar purchases. Negotiations are also underway to obtain defective can scrap from additional can manufacturers, fillers and distributors in Maryland. The Reynolds Recycling Center in Alhnam, Maryland, serves as a profit-making enterprise, in that it is cheaper (including all costs of operation up through the production of aluminum ingots) to obtain and recycle aluminum scrap than to import and refine bauxite ore.²⁰

It has been estimated that within the State of Maryland, enough aluminum is recycled by the Reynolds Aluminum Recycling Company to account for 60 percent of the cans purchased from Reynolds Metals for filling in the State.²¹ This figure does not include cans purchased from other can manufacturers.* On a national level, approximately 10 to 25 percent of aluminum beverage cans are currently returned for recycling.²²

D. Recycling of Other Materials

Although there were recent temporary shortages in raw materials used in glass bottle and steel can production, no international political pressures served to add impetus for seeking recycling of these products.

* This figure further assumes that all aluminum recycled by Reynolds Recycling Company is used for the production of beverage cans and it does not allow for the amount of aluminum recycled by Reynolds which was originally manufactured by other companies.

While there are sufficient reserves of raw materials for both these manufacturing processes, the mining and processing of the ores places great demands on limited fuel resources.²³ In addition, 100 percent of the tin and 29 percent of the iron ore used in steel can manufacture are imported.²⁴

While the recycling picture in the aluminum industry appears bright, reports from the National Association of Recycling Industries and the Institute of Scrap Iron and Steel are gloomy. According to the latter organization, total demand for iron and steel scrap is expected to be less than "the very depressed levels of 1975", due to a sluggish economy and continued heavy reliance on iron ore by major steel producers.²⁵ Current public policy favors the use of virgin materials through the use of the 15 percent federal tax depletion allowance or a 14 percent tax benefit for importation of ore from another country.²⁶ Recycling scrap does not qualify for similar tax benefits. Differential transportation costs further encourage the use of ore over recycled scrap. For years the Interstate Commerce Commission has authorized a railroad freight rate structure that results in transportation costs for ferrous scrap which are three times those of iron ore.²⁷

A major problem confronting the institution of any returnable bottle and can or other resource recovery system is that currently there is an excess of scrap materials available, without the market for creating a demand for products made from these recycled materials.²⁸ The current federal tax incentives and freight rate structures serve to discourage the establishment of new markets for such products.

I. Impact on Maryland

The impact of mandatory deposit legislation on natural resources depends on the form the legislation assumes. Nationwide EPA estimates that a potential for materials savings of 6.245 million tons of mixed materials (.545 million tons for aluminum, 2,000 tons for steel, and 6,200 tons for glass) exists from an all-refillable bottle system.²⁹

For the State of Maryland, the DECD report gives an analysis of the materials requirements for the manufacture of glass, steel, aluminum and paper packaging for the beer and softdrink demand predicted under the mandatory deposit legislation alternatives.³⁰ Table VIII-1 gives a summary of the material requirements for various container types, Table VIII-2 shows the natural resource requirements for the State of Maryland under current conditions and those expected under a 5 cent mandatory deposit system. Clearly, mandatory deposit legislation results in a decrease in natural resource consumption, amounting to a 62 percent decrease in molten aluminum requirements, a 55 percent reduction in strip steel usage, and a 6 percent decrease in glass needs. Comparison of these reductions with those predicted in New York shows that estimated percentage reductions in materials consumed for beverage containers in New York to be very similar to Alternative III of the DECD report (assuming 70 percent recycling of aluminum).³¹

Approximately 2,400 pounds of raw materials (sand, soda ash and limestone) are required to make 1 ton of glass. A ton of steel takes 1,970 pounds of iron ore, 791 pounds of coke and 454 pounds of lime. For a ton of aluminum, 8,776 pounds of bauxite, 1,020 pounds of petroleum coke, 966 pounds of soda ash, 327 pounds of pitch, and 238 pounds of lime are consumed.³²

F. Summary

"As is to be expected, the large savings in container expenditures obtainable under the mandatory deposit measures translate into substantial savings in natural resource use."³³ In Maryland, under a 5 cent mandatory deposit system, there would be a reduction in the use of aluminum by 62 percent, steel by 55 percent, and glass by 61 percent. This translates into a reduction of 6,843 tons of aluminum, 28,537 tons of steel and 121,874 tons of glass a year.

While recycling efforts provide some reduction of resource consumption, such efforts are not to be considered the primary solution to the energy and natural resource problems. Recycling should be supplementary to the main objective of eliminating unnecessary natural resource consumption; that is, resources used for luxury or energy-resource wasteful items, such as throwaway beverage containers. The effectiveness of recycling efforts could be improved, however, by changes in federal tax incentives and freight rate structures which currently discourage the use of ferrous scrap and other recycled materials.

Table VIII-1

SELECTED MATERIAL REQUIREMENTS: BEVERAGE CONTAINER SYSTEMS*
POUNDS PER 1,000 GALLONS BEVERAGE DELIVERED TO CUSTOMER

<u>Container Type</u>	<u>Material</u>			
	<u>Molten Aluminum</u>	<u>Steel Strip</u>	<u>Glass</u>	<u>Paper</u>
Aluminum Can	470			133
Three-Piece Steel Can	123	1,675		133
Non-Refillable Bottle				
Beer		53	4,083	490
Soft Drink		40	5,000	337
Refillable Bottle (ten trip)				
Beer (off-premise)		53	500	395
Soft Drink		40	850	110

* Based on 16 oz. soft drink and 12 oz. beer bottle system

Source: Research Division, Maryland Department of Economic and Community Development, Tawil, DECD Report, Table VIII-23, p. VIII-47.
(Based on Tayler H. Bingham, et al, Energy and Economic Impacts of Mandatory Deposits, Appendix F).

Table VIII-2

NATURAL RESOURCE USE: STATUS QUO AND MANDATORY DEPOSIT
(Tons Per Year)

<u>Natural Resource</u>	<u>Status Quo</u>	<u>Alternative III</u>
		<u>(5¢ Mandatory Deposit)</u>
Molten Aluminum	10,937	4,094 (-62%)
Steel Strip	51,735	23,198 (-55%)
Glass	200,527	78,653 (-61%)
Paper	23,925	19,353 (-19%)

Source: Division of Research, Maryland Department of Economic and Community Development, Tawil, DECD Report, Table VIII-24, p. VIII-48.

CHAPTER VIII

Footnotes

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9. Ibid., p. 87.
10. Ibid., p. 88.
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14. Charles J. Elia, "Heard On The Street", The Wall Street Journal (August 28, 1974), p. 25.
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30. Jack J. Tawil, Maryland Department of Economic and Community Development, Social Costs of Beverage Containers: An Economic Analysis of Six Legislative Solutions for Maryland (March 12, 1976), pp. VIII-44 - VIII-48.
31. NY Task Force Report, Tables F-7 and 5-4, p. 90.
32. Wahl and Allison, op. cit., pp. 9-10.
33. Tawil, op. cit., p. VIII-46.

CHAPTER IX: HEALTH

A. Human Health Hazards Associated With Beverage Containers

The best documented and potentially most dangerous element of beverage containers is the ingestion or aspiration of the pull-tab dropped into the beverage can. A great many people drop the tab into the can immediately upon opening in order to keep from littering and to avoid the potential harm to bare feet and animals. Pull-tabs lying about the environment create a special hazard to the infant and toddler who are attracted to them by their shiny appearance. Often these objects end up in the infant's mouth.

The intake of metal pull-tabs can cause internal tissue damage and bleeding. Particularly with infants there is a danger of the pull-tab becoming lodged in the esophagus or wedged between the vocal cords, causing difficulty with breathing and swallowing. The tragic results of the intake of pull-tabs are complicated by the fact that the tabs are made of aluminum, which is not as dense or radiopaque as other metals, and therefore is difficult to identify on standard roentgenograms (x-rays).¹ Case histories detailing the types of incidents which can occur from the ingestion or aspiration of pull-tabs can be found in Appendix F.

The experiences and documented cases brought to the attention of the pediatric community of Michigan alarmed that group sufficiently enough to bring their solid support behind the state-wide initiative in last November's election. Both the Detroit Pediatric Society and the

Michigan Chapter of the American Association of Pediatrics gave their endorsement to mandatory deposit legislation.²

B. Animal Hazards

Easy-to-tote containers and their by-products, the flip-top, pull-tab and plastic six-pack binder quickly become lethal snares to animals who see them as a possible food source.³ Birds have been found with binders looped around their bills and necks, fish girdled with pull-tab rings which cut into their bodies as the fish grow. Sportsfishermen have reported finding pull-tabs in the stomachs of fish and small fish have been found wedged into discarded beer bottles and cans. A detailed account of such incidents is reported in Appendix

In addition to the harm caused by the food deception aspect of beverage container by-products, the containers themselves produce hazards to both domestic animals and wildlife. Steel, aluminum and glass create harm when animals step on broken glass or through beverage cans.⁴ For this reason, farmers were prime organizers and supporters of mandatory deposit legislation in many states, particularly Vermont and Michigan.⁵

In Oregon, concern over injuries to both humans and animals led the legislature to include a ban on pull-tab closures as a part of the State's mandatory deposit law. Many beverage cans sold in Oregon have a non-detachable "push-in" top.⁶ The mandatory deposit law in Michigan also bans pull-tabs, while the laws of Vermont and Maine ban both pull-tabs and plastic six-pack rings. (See Appendix A)

C. Broken and Shattered Glass

It is likely that with the reduction of beverage container litter, resulting from a mandatory deposit legislation, injuries resulting from

broken glass and pull-tabs would be sharply reduced.⁷ The beverage container portion of litter in Oregon decreased at least 66 percent. With a deposit incentive, a person is less likely to smash a bottle and render it worthless.⁸

The same report addressing the problem of shattering glass refutes the argument that a returnable-refillable system would increase the possibility of exploding bottles by stating that non-returnable bottles are made of thinner glass and break easier than the heavier refillable bottles.⁹ For this reason, the Consumer Product Safety Commission has recommended use of refillable bottles to safeguard against explosions and breakage.¹⁰

Public hearings, prompted by a petition from Adolph Coors Company, were held by the Consumer Products Safety Commission in 1974. Coors felt that the glass manufacturers' standards were so low and the quality of glass so poor that it was impossible to prevent defective bottles from entering the market even after inspection at three different stages. Witnesses before the commission told of injuries ranging from minor cuts to permanent blindness in one eye mostly caused by exploding bottles. Data based on samplings obtained by government computers estimated that 111,000 injuries treated in emergency rooms of hospitals in a year's time were associated with glass containers, most of which were non-returnable.¹¹

D. Sanitation

Next to loss of jobs, perhaps the most frequently heard objections to any mandatory deposit legislation are claims of transmission of disease by vermin, cockroaches, rats, mice, insects, germs, mold, etc.

Sanitation problems could arise in basically two areas: in the sterility of reused containers, or in their storage after use. As to the sterility question, the increasing number of refillable bottles would only create problems if present refillable bottle washing and sterilizing procedures are inadequate. In Oregon, the number of refillable bottles has doubled since the law took effect and the Oregon State Department of Agriculture's Consumer Protection, which handles such sanitation complaints, has found no increase in complaints since the implementation of the law.¹²

Dr. Carlos Stern, Professor of Agricultural Economics at the University of Connecticut, has reviewed the "hydro" cleaning machines used by most beverage companies in the United States. He reports that the combination of agitated soaking and hot jet sprays will remove almost all foreign matter from the bottles. According to the leading manufacturer of bottle wash machinery for brewers, the electronic inspection system will detect all but infinitesimal amounts of the smallest foreign matter remaining. Whatever foreign matter is not flushed from the bottle in this process is sanitized by heat and caustic solution to a degree known as "industrial" or "practical" sterility. It remains improbable, however, that any such sanitized but objectionable foreign material remaining in the bottle would not have been detected by one of the inspection systems between the bottle's discharge from the soaker and its being filled, capped, and crated. Upon such detection, the bottle would have been removed from the filling line.¹³

While retailers of beverages generally raise the complaint that the returnable system will create sanitation problems, there is little data available to substantiate these claims.¹⁴ The Oregon State

University study reported that several complaints were registered in personal interviews with grocers during the first months of the implementation of the bottle bill. It explains, however, that at the time, many returnable bottles were being scavenged from garbage dumps and that the reported returns of such grossly unsanitary bottles have greatly declined. In written surveys, few grocers indicated concerns or problems with sanitation.¹⁵ The Administrator of the Health Division of Oregon's Department of Human Resources has stated: "There is no reason to believe that any competently operated distributorship would allow returned bottles to remain uncollected in the hands of retailers for so many weeks that they might become a sanitary or aesthetic hazard."¹⁶

A letter from the Assistant Commissioner of New York State's Department of Health also states that the chances of transmitting diseases from containers is remote.¹⁷ The problems of sanitation are also diminished when the law specifies that returned containers be empty and reasonable clean.¹⁸

E. Summary

This study has clearly illustrated the danger of pull-tabs to both humans and animals. The information strongly warrants consideration of a ban on such pull-tab closures as a part of a mandatory deposit law.

With the reduction of beverage container litter, injuries from broken glass could be expected to decrease dramatically. Refillable bottles have been recommended by the Consumer Product Safety Commission as a safeguard against explosions and breakage.

Although grocers, in particular, have voiced complaints concerning the sanitary problems involved with a returnable system, reports from

other states indicate that sanitation is not a problem. Any potential for such problems are greatly reduced if mandatory deposit legislation specifically requires returned containers to be empty.

CHAPTER IX

Footnotes

1. Lee F. Rogers, M.D., John P. Igini, M.D., "Beverage Can Pull-Tabs" from The Journal of the American Medical Association, Vol. 233 (July 28, 1975), p. 345.
2. Richard Jamieson, Michigan United Conservation Clubs, Telephone Conversation with Ajax Eastman of the Maryland Conservation Council (January 6, 1977).
3. Penny Ward, "Deadly Throwaways", booklet reprinted from Defenders of Wildlife magazine (1975), p. 1.
4. Ibid., p. 3.
5. Susan Foller, "This is It for the Bottle Bill", Rodale's Environmental Action Bulletin, Vol. 7 #18 (September 4, 1976).
6. New York State Senate Task Force on Critical Problems, No Deposit, No Return (Albany, 1975), p. 96. (Hereinafter cited as NY Task Force Report).
7. Ibid.
8. Edwin F. Lowry, Thomas W. Fenner, and Rosemary W. Lowry, Stanford Environmental Society, Disposing of Non-Returnables, A Guide to Minimum Deposit Legislation (Stanford, 1975), p. 110.
9. Ibid., p. 118.
10. Arthur E. Rowe, "Exploding Bottle Hazards Cited", The Baltimore Sun (April 25, 1974).
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12. NY Task Force Report, p. 95.
13. Carlos Stern, Emma Verdierk, Steward Smith, and Travis Hedrick, University of Connecticut, Impacts of Beverage Container Legislation on Connecticut and A Review of the Experience in Oregon, Vermont, and Washington State (Storrs, Connecticut, 1975), p. 150.
14. NY Task Force Report, p. 95.
15. Charles H. Gudger and Jack C. Bailes, Oregon State University, The Economic Impact of Oregon's "Bottle Bill" (Corvallis, Oregon, 1974), p. 61.
16. Cornelius Bateson, Administrator, Health Division, Department of Human Resources of the State of Oregon, Letter to Rick Chambers (February 15, 1973).

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17. NY Task Force Report, p. 95.

18. Ibid.

CHAPTER X: RECOMMENDATIONS

This report indicates that a mandatory deposit system for soft drink and beer containers in Maryland would provide many benefits to the state. The primary benefit of such a system would be the positive environmental effects associated with producing and discarding fewer containers: the reduction of energy and natural resource consumption, litter and solid waste generation and health hazards. The effects of a returnable system include increased costs for retailers and distributors. Transitional costs resulting from the change to a returnable system would require some redistribution of labor and initial costs of capital investment for necessary equipment.

While a mandatory deposit system is not a panacea to Maryland's litter, solid waste, energy and natural resource depletion problems, it is able to make major tangible progress and also sets an example of a more efficient and conservative system. In other words, it is a good place to begin. The scheduling of the elimination of flip-top and pull-tab containers and the establishment of area redemption and recycling centers should also be incorporated into mandatory deposit legislation.

Certainly any significant change will entail costs and even hardships to some persons and organizations. This report does not minimize the human importance of these considerations. The report does conclude, however, that Maryland has the economic means and human resources to design a transition to a returnable system which can benefit Maryland as a whole but also take precautions for the people who might be adversely affected.

Finally, this report concludes that, given consideration of the long-term benefits and costs of alternative beverage systems, a mandatory deposit system is the most responsible and comprehensive approach to the State's beverage container concerns and needs.

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APPENDIX A

MANDATORY DEPOSIT LEGISLATION IN OTHER JURISDICTIONS

Compilation

The following table is a compilation of the four states which have state-wide legislation requiring mandatory deposits on beverage containers and the one state requiring reusable, recyclable or biodegradable containers and also of the counties and municipalities in Maryland having enacted or endorsed such legislation. Also included are federal regulations requiring mandatory deposits on sales at federal facilities by federal agencies. Copies of the respective statutes, ordinances, resolutions, and regulations may be found at the end of this appendix.

<u>Other Jurisdictions</u>	<u>Enacted</u>	<u>Effective</u>	<u>Provisions</u>
Oregon	1971	1 Oct 72	5¢ mandatory refund; 2¢ for certified containers capable of refill by more than one manufacturer; bans pull-tabs; authorizes redemption centers.
Vermont	1972	1 Jul 73	5¢ mandatory deposit and refund; bans pull-tabs, plastic 6-pack rings, and non-refillable bottles; authorizes redemption centers.
Maine	1976	1 Jan 78	5¢ mandatory refund; bans pull-tabs and plastic 6-pack rings; authorizes redemption centers.
Michigan	1976	Nov 78	10¢ mandatory deposit and refund; 5¢ for certified containers; bans pull-tabs.

<u>Other Jurisdictions</u>	<u>Enacted</u>	<u>Effective</u>	<u>Provisions</u>
South Dakota	1974	1 Jul 78	Bans any beverage container that is not reusable, recyclable or biodegradable.

Howard Co., Maryland	1971	2 Jul 71	5¢ mandatory deposit and refund.
Howard Co., Maryland	1976 (repealed and enacted 1971 law)	1 Jan 77 (petitioned to referendum 1978)	5¢ mandatory refund; 2¢ for certified containers; bans pull-tabs.
Montgomery Co., Maryland	1975	1 Jan 78	5¢ mandatory refund; bans pull-tabs.
City of Bowie, MD	1971	28 Mar 71	5¢ mandatory deposit and refund.
City of Annapolis, MD	1975	10 Mar 75	Endorses returnable beverage container legislation.

United States of America	1976	21 Sep 77 (EPA regulations)	5¢ mandatory deposit and refund; (applies only to federal agencies and federal facilities, e.g. beverage sales on a military base).

As the above table indicates, four other states have enacted mandatory deposit legislation. Oregon and Vermont are actively enforcing their present laws while Maine and Michigan's laws were petitioned by initiative and enacted by the voters of each state at the November 2, 1976, election. They become effective in 1978. The voters of two other states, Colorado and Massachusetts defeated similar measures at the polls on November 2nd.

In Maryland, the City of Bowie and Howard and Montgomery Counties have enacted mandatory deposit legislation. Bowie's "bottle bill", the first in this state, was enacted in 1971 and its constitutionality and legality upheld by the Maryland Court of Appeals in Bowie Inn, Inc.

et al. v. City of Bowie, 274 MD 230 (1975). The Oregon law was also upheld by the Oregon Court of Appeals in American Can Co. et al v. Oregon Liquor Control Commission, 517 P.2d 6916 (1973). Neither Bowie's nor Howard County's legislation has yet been enforced largely due to court challenges. The Howard County legislation has been petitioned to referendum for the 1978 election. The Montgomery County legislation is not to be enforced until January 1, 1978. Also, the City of Annapolis, by resolution adopted March 10, 1975, endorsed returnable bottle legislation at "higher governmental levels".

At the federal level, in 1976, the U. S. Senate defeated an amendment to a solid waste bill; the amendment to require mandatory deposits on beverage containers throughout the U. S. But on September 21, 1976, regulations requiring a 5 cent deposit and refund on all beverage containers sold at federal facilities in the U. S. were issued by the Environmental Protection Agency.¹ These regulations require this mandatory deposit system to be implemented by September 21, 1977.

This compilation of state and local laws mandating returnable beverage container systems is not meant to include all local legislation in the U. S. or legislation outside the U. S. Legislation does exist in many other locals, including British Columbia in Canada, national legislation in Finland and Norway, and local legislation in Oberlin, Ohio, and Richland County, Washington.²

Summary

The common denominator found in legislation designed to deal with throwaway beverage containers is a mandatory 5 cent refund system on all beverage containers of malt and soft drink products. Many of the current laws also require a 5 cent mandatory deposit and reduce this deposit and

refund 2 cents where the container is certified by the state or locale as "standardized" or refillable by more than one beverage producer.

Also a commonly found provision is authority to establish redemption centers for returnables. This is designed to relieve the retail merchant of some of the volume of returnables and to facilitate the return of beverage containers.

Prevalent in this legislation is a ban on "pull-tabs" or "flip-top" cans as well as a prohibition against the plastic ring connectors used in six-packs.

¹ 41 Federal Register 184, Tuesday, September 21, 1976.

² Savage, John F. and Henry R. Richmond III. 1974.
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**"BOTTLE BILL" AS ENACTED BY
OREGON LEGISLATIVE ASSEMBLY--1971 REGULAR SESSION
AND AMENDED BY
OREGON LEGISLATIVE ASSEMBLY--1973 REGULAR SESSION**

Relating to beverage containers; and providing penalties.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OREGON:

SECTION 1. As used in this Act, unless the context requires otherwise:

(1) "Beverage" means beer or other malt beverages and mineral waters, soda water and similar carbonated soft drinks in liquid form and intended for human consumption.

(2) "Beverage container" means the individual, separate sealed glass, metal or plastic bottle, can, jar or carton containing a beverage.

(3) "Commission" means the Oregon Liquor Control Commission.

(4) "Consumer" means every person who purchases a beverage in a beverage container for use or consumption.

(5) "Dealer" means every person in this state who engages in the sale of beverages in beverage containers to a consumer, or means a redemption center certified under section 8 of this Act.

(6) "Distributor" means every person who engages in the sale of beverages in beverage containers to a dealer in this state including any manufacturer who engages in such sales.

(7) "In this state" means within the exterior limits of the State of Oregon and includes all territory within these limits owned by or ceded to the United States of America.

(8) "Manufacturer" means every person bottling, canning or otherwise filling beverage containers for sale to distributors or dealers.

(9) "Place of business of a dealer" means the location at which a dealer sells or offers for sale beverages in beverage containers to consumers.

(10) "Use or consumption" includes the exercise of any right or power over a beverage incident to the ownership thereof, other than the sale or the keeping or retention of a beverage for the purposes of sale.

SECTION 2. (1) Except as provided in subsection (2) of this section, every beverage container sold or offered for sale in this state shall have a refund value of not less than five cents.

(2) Every beverage container certified as provided in section 6 of this Act, sold or offered for sale in this state, shall have a refund value of not less than two cents.

SECTION 3. Except as provided in Section 4 of this Act:

(1) A dealer shall not refuse to accept from any person any empty beverage containers of the kind, size and brand sold

by the dealer, or refuse to pay to that person the refund value of a beverage container as established by section 2 of this Act.

(2) A distributor shall not refuse to accept from a dealer any empty beverage containers of the kind, size and brand sold by the distributor, or refuse to pay the dealer the refund value of a beverage container as established by section 2 of this Act.

SECTION 4. (1) A dealer may refuse to accept from any person, and a distributor may refuse to accept from a dealer any empty beverage container which does not state thereon a refund value as established by section 2 of this Act.

(2) A dealer may refuse to accept and to pay the refund value of empty beverage containers if the place of business of the dealer and the kind and brand of empty beverage containers are included in an order of the commission approving a redemption center under section 8 of this Act.

SECTION 5. (1) Every beverage container sold or offered for sale in this state by a dealer shall clearly indicate by embossing or by a stamp, or by a label or other method securely affixed to the beverage container, the refund value of the container.

(2) Subsection (1) of this section shall not apply to glass beverage containers designed for beverages having a brand name permanently marked thereon which, on the operative date of this Act had a refund value of not less than five cents.

(3) No person shall sell or offer for sale at retail in this state any metal beverage container so designed and constructed that a part of the container is detachable in opening the container without the aid of a can opener.

SECTION 6. (1) To promote the use in this state of reusable beverage containers of uniform design, and to facilitate the return of containers to manufacturers for reuse as a beverage container, the commission may certify beverage containers which satisfy the requirements of this section.

(2) A beverage container may be certified if:

(a) It is reusable as a beverage container by more than one manufacturer in the ordinary course of business; and

(b) More than one manufacturer will in the ordinary course of business accept the beverage container for reuse as a beverage container and pay the refund value of the container.

(3) The commission may by rule establish appropriate liquid capacities and shapes for beverage containers to be certified or decertified in accordance with the purposes set forth in subsection (1) of this section.

(4) A beverage container shall not be certified under this section if by reason of its shape or design, or by reason of words or symbols permanently inscribed thereon, whether by engraving, embossing, painting or other permanent method, it is reusable as a beverage container in the ordinary course of business only by a manufacturer of a beverage sold under a specific brand name.

SECTION 7. (1) Unless an application for certification under section 6 of this Act is denied by the commission within 60 days after the filing of the application, the beverage container shall be deemed certified.

(2) The commission may review at any time certification of a beverage container. If after such review, with written notice and hearing afforded to the person who filed the application for certification under section 6 of this Act, the commission determines the container is no longer qualified for certification, it shall withdraw certification.

(3) Withdrawal of certification shall be effective not less than 30 days after written notice to the person who filed the application for certification under section 6 of this Act. and to the manufacturers referred to in subsection (2) of section 6 of this Act.

SECTION 8. (1) To facilitate the return of empty beverage containers and to serve dealers of beverages, any person may establish a redemption center, subject to the approval of the Oregon Liquor Control Commission, at which any person may return empty beverage containers and receive payment of the refund value of such beverage containers,

(2) Application for approval of a redemption center shall be filed with the commission. The application shall state the name and address of the person responsible for the establishment and operation of the redemption center, the kind and brand names of the beverage containers which will be accepted at the redemp-

tion center and the names and addresses of the dealers to be served by the redemption center. The application shall include such additional information as the commission may require.

(3) The commission shall approve a redemption center if it finds the redemption center will provide a convenient service to persons for the return of empty beverage containers. The order of the commission approving a redemption center shall state the dealers to be served by the redemption center and the kind and brand names of empty beverage containers which the redemption center must accept. The order may contain such other provisions to insure the redemption center will provide convenient service to the public as the commission may determine.

(4) The commission may review at any time approval of a redemption center. After written notice to the person responsible for the establishment and operation of the redemption center, and to the dealers served by the redemption center, the commission may, after hearing, withdraw approval of a redemption center if the commission finds there has not been compliance with its order approving the redemption center, or if the redemption center no longer provides a convenient service to the public.

SECTION 9. The procedures for certification or withdrawal provided for in sections 6 to 8 of this Act shall be in accordance with ORS chapter 183.

SECTION 10. (1) Any person who violates section 2, 3 or 5 of this Act shall be punished, upon conviction, as for a misdemeanor.

(2) In addition to the penalty prescribed by subsection (1) of this section, the commission or the State Department of Agriculture may revoke or suspend the license of any person who wilfully violates section 2, 3 or 5 of this Act, who is required by ORS chapter 471 or 635, respectively, to have a license.

SECTION 11. (1) During the period commencing October 1, 1972, and ending when it submits the report provided for in subsection (2) of this section, the Legislative Fiscal Committee shall cause to be conducted a study of the operation of sections 1 to 10 of this Act that shall include, but not be limited to, an analysis of:

(a) Its economic impact on persons licensed under ORS chapter 635 who engage in the nonalcoholic beverage manufacturing business, on persons engaged in the business of manufacturing beer and other malt beverages and on persons engaged in the business of manufacturing beverage containers in complying with the provisions of sections 1 to 10 of this Act.

(b) The problems, if any, incurred in the distribution, sale and return of beverage containers subject to the provisions of sections 1 to 10 of this Act.

(c) The effectiveness of the provisions of sections 1 to 10 of this Act in the reduction of the incidence of the littering by beverage containers in this state.

(d) The costs incurred in the enforcement of the provisions of sections 1 to 10 of this Act.

(2) Prior to January 1, 1975, the Legislative Fiscal Com-

mittee shall prepare and submit to the Fifty-eighth Legislative Assembly of the State of Oregon a report of its findings made pursuant to subsection (1) of this section and its recommendations with respect to any legislative proposals considered by it to be necessary as the result of the study conducted as required by subsection (1) of this section.

SECTION 12. This Act shall not become operative until October 1, 1972, and shall apply to all beverage containers sold or offered for sale after October 1, 1972, except that applications under sections 6 and 8 of this Act may be made prior to October 1, 1972, the certification referred to in section 6 of this Act and the approval referred to under section 8 of this Act may be delivered prior to October 1, 1972, and the commission shall adopt rules and regulations under sections 6 and 8 of this Act prior to October 1, 1972.

Chapter 53. *Liter Levy; Aid to Municipalities for Sanitary Landfills, Recycling Centers*

SECTION

- 1521. Definitions.
- 1522. Beverage containers; deposit.
- 1522a. Liter levy.
- 1523. Acceptance of beverage containers.
- 1524. Labeling.
- 1525. Prohibitions.
- 1526. Educational program.
- 1527. Penalty.

§ 1521. Definitions

For the purpose of this chapter:

- (1) "Beverage" means beer or other malt beverages and mineral waters, soda water and carbonated soft drinks in liquid form and intended for human consumption.
- (2) "Biodegradable material" means material which is capable of being broken down by bacteria into basic elements.
- (3) "Container" means the individual, separate, bottle, can, jar or carton composed of glass, metal, paper, plastic or any combination of those materials containing a consumer product. This definition shall not include containers made of biodegradable material.
- (4) "Distributor" means every person who engages in the sale of consumer products in containers to a dealer in this state including any manufacturer who engages in such sales.
- (5) "Manufacturer" means every person bottling, canning, packing or otherwise filling containers for sale to distributors or dealers.
- (6) "Recycling" means the process of sorting, cleansing, treating and reconstituting waste and other discarded materials for the purpose of reusing the materials in the same or altered form.
- (7) "Redemption center" means a store or other location where

any person may, during normal business hours, redeem the amount of the deposit for any empty beverage container labeled or certified pursuant to section 1524 of this title.

(8) "Refillable" means a beverage container which can be refilled at least five times and is so certified by type by the secretary.

(9) "Secretary" means the secretary of the agency of environmental conservation.—Amended 1975, No. 105, § 1, eff. July 1, 1975. 1975 amendment. Subdivision (1): Redefined "beverage". Subdivisions (7)-(9): Added.

§ 1522. Beverage containers; deposit

- (a) A deposit of not less than five cents shall be paid by the consumer on each beverage container sold at the retail level and refunded to him upon return of the empty beverage container.
- (b) A retailer or a person operating a redemption center who redeems beverage containers shall be reimbursed by the manufacturer or distributor of such beverage containers in an amount which is at least twenty percent of the amount of the deposit returned to the consumer.
- (c) The secretary may promulgate rules and regulations necessary to implement this chapter.
- (d) The secretary shall prepare and print suitable posters for sale, at cost, to persons who wish to post the hours during which containers will be redeemed at their places of business. Containers shall be redeemed during no fewer than 40 hours per week during the regular operating hours of the establishment. The poster shall be substantially in the following form:

NOTICE TO CUSTOMERS

In accordance with the provisions of section 1523(a) of Title 10, Vermont Statutes Annotated, this store will redeem clean beverage containers during the following 40 or more hours of each week:

Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____

(Name of store or establishment)

(Operator, manager, or owner)

—Amended 1975, No. 105, § 2, eff. July 1, 1975.

1975 amendment. Amended section generally.

§ 1522a. Litter levy

(a) A levy is hereby exacted on all vinous and spirituous beverage containers sold in the state intended for resale, use or consumption in this state at the rate of 4 mills on each container sold. As used in this section "beverage" includes vinous and spirituous beverages as defined in section 2 of Title 7.

(b) The levy provided in this section shall be paid by every manufacturer or distributor to the commissioner of taxes. Whenever a retailer, group of retailers or retail chain contracts for, receives consignment of, or in any other manner acquires vinous or spirituous beverages in beverage containers outside of the state for sale, use or consumption in the state, the levy exacted pursuant to this section shall be paid to the commissioner of taxes by such retailer, retail group or chain. The commissioner of taxes shall adopt and publish all forms and regulations necessary for the purposes of this chapter.—Added 1975, No. 105, § 3, eff. July 1, 1975.

Distribution of prior funds. 1975, No. 118, § 56, eff. April 30, 1975, as amended by 1975, No. 254 (Adj. Sess.), § 143, provided: "Any funds which have been collected pursuant to section 1522 of Title 10 and have not been disbursed to towns in accordance with section 1524 of Title 10 shall be disbursed to towns when the sanitary landfills in those towns come into conformance with laws and regulations governing them, before July 1, 1978."

§ 1523. Acceptance of beverage containers

(a) Except as provided in section 1522 of this title:

(1) A retailer shall not refuse to accept from any person any empty beverage containers of the kind, size and brand sold by the retailer, or refuse to pay to that person the refund value of a beverage container as established by section 1522 of this title, except as provided in subsection (b) of this section.

(2) A manufacturer or distributor may not refuse to accept from a retailer or a person operating a redemption center any empty beverage containers of the kind, size and brand sold by the

manufacturer or distributor, or refuse to pay the retailer or a person operating a redemption center the refund value of a beverage container as established by section 1522 of this title.

(b) A retailer, with the prior approval of the secretary, may refuse to redeem beverage containers if a redemption center or centers are established which serve the public need.

(c) A retailer or a person operating a redemption center may refuse to redeem beverage containers which are not clean.

(d) A retailer or group of retailers may petition the secretary for the establishment of a redemption center.

(e) The secretary shall, upon due notice to the public and other affected parties, hold a public hearing upon the petition. After investigation and hearing, the secretary, after determination of need and service to be provided by the establishment of a redemption center, shall issue his order authorizing the distributors or retailers affected and servicing the community or area involved to establish a redemption center or alternate method of redemption, or shall deny the petition if found adverse to the public need.—Amended 1975, No. 105, § 4, eff. July 1, 1975.

1975 amendment. Amended section generally.

§ 1524. Labelling

(a) Every beverage container sold or offered for sale at retail in this state shall clearly indicate by embossing or imprinting on the normal product label, or in the case of a metal beverage container on the top of the container, the word "Vermont" and the refund value of the container in not less than one-quarter inch type size.

(b) This section shall not apply to beverage containers which are certified as refillable by the secretary.—Amended 1975, No. 105, § 5, eff. Sept. 1, 1975.

1975 amendment. Amended section generally.

1. Notice in lieu of label. Neither the posting of notice in retail stores, nor the accompanying of home deliveries with a printed notice, complies with the container labeling requirement that each container be clearly labeled with the amount of deposit and the name of this state. 1974 Op. Atty. Gen. 69.

§ 1525. Prohibitions

No beverage shall be sold or offered for sale at retail in this state:

(1) in a metal container designed and constructed so that part of the container is detachable in opening the container, or in a glass beverage container which has not been certified as refillable by the secretary;

(2) in containers connected to each other with plastic rings or similar devices which are not classified as biodegradable by the secretary.—Amended 1975, No. 105, § 6, eff. Jan. 1, 1977.

1975 amendment. Amended section generally.

§ 1526. Educational program

(a) State informational material such as travel pamphlets, road maps and similar publications submitted for printing on or after July 1, 1975 shall bear information relating to this chapter. This information shall take the form of a standard public statement relating to the deposit law provided by the secretary.

(b) The department of education may incorporate information on this chapter in educational material which it normally distributes to primary and secondary educational institutions within the state. The department may cooperate with the agency of environmental conservation in distributing any additional informative material on this chapter to schools in the state.—Added 1975, No. 105, § 7, eff. July 1, 1975.

§ 1527. Penalty

A person who violates a provision of this chapter shall be fined not more than \$1,000.00 for each violation.—Added 1975, No. 105, § 8, eff. July 1, 1975.

declared invalid and of no force and superseded by this chapter on its effective date.

Sec. 16. 32 MRSA c. 28 is enacted to read:

CHAPTER 28

MANUFACTURERS, DISTRIBUTORS AND DEALERS OF
BEVERAGE CONTAINERS

§ 1861. Purpose

1. Legislative findings. The Legislature finds that beverage containers are a major source of nondegradable litter and solid waste in this State and that the collection and disposal of this litter and solid waste constitutes a great financial burden for the citizens of this State.

2. Intent. It is the intent of the Legislature to create incentives for the manufacturers, distributors, dealers and consumers of beverage containers to reuse or recycle beverage containers thereby removing the blight on the landscape caused by the disposal of these containers on the highways and lands of the State and reducing the increasing costs of litter collection and municipal solid waste disposal.

§ 1862. Definitions

As used in this chapter, unless the context otherwise indicates, the following words and phrases shall have the following meanings.

1. Beverage. "Beverage" means beer, ale or other drink produced by fermenting malt, soda water or other nonalcoholic carbonated drink in liquid form and intended for human consumption.

2. Beverage container. "Beverage container" means a glass, metal or plastic bottle, can, jar or other container which has been sealed by a manufacturer and which, at the time of sale, contains one gallon or less of a beverage.

3. Commissioner. "Commissioner" means the Commissioner of Agriculture.

4. Consumer. "Consumer" means an individual who purchases a beverage in a beverage container for use or consumption.

5. Dealer. "Dealer" means a person who sells, offers to sell or engages in the sale of beverages in beverage containers to a consumer, including, but not limited to, an operator of a vending machine containing beverages in beverage containers.

6. Department. "Department" means the Department of Agriculture.

7. Distributor. "Distributor" means a person who engages in the sale of beverages in beverage containers to a dealer in this State and includes a manufacturer who engages in such sales.

8. In this State. "In this State" means within the exterior limits of the State of Maine and includes all territory within these limits owned by or ceded to the United States of America.

9. Manufacturer. "Manufacturer" means a person who bottles, cans or otherwise places beverages in beverage containers for sale to distributors or dealers.

refuse to pay to the dealer or local redemption center the refund value of a beverage container as established by section 1863.

4. Reimbursement by distributor. In addition to the payment of the refund value, the distributor shall reimburse the dealer or local redemption center for the cost of handling beverage containers, in an amount which equals at least 1¢ per returned container.

§ 1867. Redemption centers

1. Establishment. Local redemption centers may be established and operated by any person, subject to the approval of the commissioner, to serve local dealers and consumers, at which consumers may return empty beverage containers as provided under section 1866.

2. Application for approval. Application for approval of a local redemption center shall be filed with the department. The application shall state the name and address of the person responsible for the establishment and operation of the center, the kinds, sizes and brand names of beverage containers which will be accepted and the names and addresses of dealers to be served and their distances from the local redemption center.

3. Approval. The commissioner shall approve a local redemption center if he finds that the center will provide a convenient service for the return of empty beverage containers. The order approving a local redemption center shall state the dealers to be served and the kinds, sizes and brand names of empty beverage containers which the center shall accept.

4. Redemption center acceptance. A local redemption center shall not refuse to accept from any consumer or other person not a dealer any empty, unbroken and reasonably clean beverage container of the kind, size and brand sold by a dealer served by the center or refuse to pay in cash the refund value of the returned beverage container as established by section 1863.

5. Posted lists. A list of the dealers served and the kinds, sizes and brand names of empty beverage containers accepted shall be prominently displayed at each local redemption center.

6. Withdrawal of approval. The commissioner may review at any time approval of a local redemption center. After written notice to the person responsible for the establishment and operation of the local redemption center and to the dealers served by the center, the commissioner may, after hearing, withdraw approval of a local redemption center if he finds there has not been compliance with the approval order or if the local redemption center no longer provides a convenient service to the public.

§ 1868. Prohibition on certain types of containers and holders

No beverage container shall be sold or offered for sale to consumers in this State:

Buns → 1. Flip tops. In a metal container designed or constructed so that part of the container is detachable for the purpose of opening the container without the aid of a separate can opener; and

Buns → 2. Connectors. With containers connected to each other by a separate holding device constructed of plastic rings or other device or material which cannot be broken down by bacteria into basic elements.

§ 1869. Penalties

1. Civil violation. A violation of this chapter by any person shall be a civil violation for which a forfeiture of not more than \$100 may be adjudged.

10. Operator of a vending machine. "Operator of a vending machine" means an owner of a vending machine, the person who refills it, or the owner or lessee of the property upon which it is located.

11. Person. "Person" means an individual, partnership, corporation or other legal entity.

12. Premises. "Premises" means the property of the dealer or his lessor on which the sale is made.

13. Use or consumption. "Use or consumption" means the exercise of any right or power over a beverage incident to the ownership thereof, other than the sale, storage or retention for the purpose of sale of a beverage.

§ 1863. Refund value

5¢ refund } Every beverage container sold or offered for sale to a consumer in this State shall have a refund value. The refund value shall be determined by the manufacturer according to the type, kind and size of the beverage container, but shall not be less than 5¢.

§ 1864. Dealer as distributor

Whenever a dealer or group of dealers receives a shipment or consignment of, or in any other manner acquires, beverage containers outside the State for sale to consumers in the State, such dealer or dealers shall comply with this chapter as if they were distributors, as well as dealers.

§ 1865. Labels; stamps; brand names

1. Labels. Except as provided under subsection 2, the refund value shall be clearly indicated on every beverage container sold or offered for sale by a dealer in this State, by embossing, stamping, labeling or other method of secure attachment to the beverage container. The refund value shall not be indicated on the bottom of the container. Metal beverage containers shall be embossed or stamped on the top of the container.

2. Brand name. Glass beverage containers having a refund value of not less than 5¢ prior to the effective date of this chapter and having a brand name permanently marked thereon, shall not be required to indicate the refund value under subsection 1.

§ 1866. Application

1. Dealer acceptance. Except as provided in this section, a dealer shall not refuse to accept from any consumer or other person not a dealer any empty, unbroken and reasonably clean beverage container of the kind, size and brand sold by the dealer, or refuse to pay in cash the refund value of the returned beverage container as established by section 1863. This section shall not require an operator of a vending machine to maintain a person to accept returned beverage containers on the premises where the vending machine is located.

2. Permissive refusal by dealer. A dealer may refuse to accept from a consumer or other person and to pay the refund value on any beverage container, if the place of business of the dealer and the kind, size and brand of beverage container are included in an order of the department approving a redemption center under section 1867.

3. Distributor acceptance. A distributor shall not refuse to accept from any dealer or local redemption center any empty, unbroken and reasonably clean beverage container of the kind, size and brand sold by the distributor or

2. Separate violations. Each day that such violation continues or exists shall constitute a separate offense.

Referendum; effective date. Sections 1 to 15 of this Act shall take effect 90 days after adjournment of the Legislature. Section 16 of this Act shall take effect 90 days after the adjournment of the Legislature only for the purpose of presenting it to the legal voters of the State of Maine at the general state-wide election to be held on the Tuesday following the first Monday of November following the passage of this Act.

The aldermen of the cities, the selectmen of the towns and the assessors of the several plantations of this State are empowered and directed to notify the inhabitants of their respective cities, towns and plantations to meet in the manner prescribed by law for calling and holding biennial meetings of said inhabitants for the election of Senators and Representatives at the general state-wide election on the Tuesday following the first Monday of November following the passage of this Act, to give in their votes upon the acceptance or rejection of the foregoing Act, and the question shall be:

"Shall section 16 of 'AN ACT to Improve Solid Waste Management,' which section requires a minimum 5¢ deposit on all returnable beverage containers, as passed by the First Special Session of the 107th Legislature, become law?"

The inhabitants of said cities, towns and plantations shall indicate by a cross or check mark placed within a square upon their ballots their opinion of the same, those in favor of acceptance voting "Yes" and those opposed to acceptance voting "No" and the ballots shall be received, sorted, counted and declared in open ward, town and plantation meetings and return made to the office of the Secretary of State in the same manner as votes for Governor and Members of the Legislature, and the Governor and Council shall review the same and if it shall appear that a majority of the inhabitants voting on the question are in favor of section 16 of said Act, the Governor shall forthwith make known the fact by his proclamation and section 16 of the Act shall become effective January 1, 1978.

Secretary of State shall prepare ballots. The Secretary of State shall prepare and furnish to the several cities, towns and plantations ballots and blank returns in conformity with the foregoing Act, accompanied by a copy thereof.

IN HOUSE OF REPRESENTATIVES.....1976

Read twice and passed to be enacted.

.....*Speaker*

IN SENATE.....1976

Read twice and passed to be enacted.

.....*President*

Approved.....1976

.....*Governor*

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Sec. 1. As used in this act:

(a) "Beverage" means a soft drink, soda water, carbonated natural or mineral water, or other nonalcoholic carbonated drink; beer, ale, or other malt drink of whatever alcoholic content.

(b) "Beverage container" means an airtight metal, glass, paper, or plastic container, or a container composed of a combination of these materials, which, at the time of sale, contains 1 gallon or less of a beverage.

dict
copy
(c) "Returnable container" means a beverage container upon which a deposit of at least 10 cents has been paid, or is required to be paid upon the removal of the container from the sale or consumption area, and for which a refund of at least 10 cents in cash is payable by every dealer or distributor in this state of that beverage in beverage containers, as further provided in section 2. A beverage container certified as provided in section 3 shall also be deemed a returnable container if the deposit is at least 5 cents, and the requirements of the preceding sentence are met in all other respects.

(d) "Nonreturnable container" means a beverage container upon which no deposit or a deposit of less than 10 cents has been paid, or is required to be paid upon the removal of the container from the sale or consumption area, or for which no cash refund or a refund of less than 10 cents is payable by a dealer or distributor in this state of that beverage in beverage containers, as further provided in section 2. A beverage container certified as provided in section 3 shall not be deemed a nonreturnable beverage container if the deposit is at least 5 cents, and the requirements of the first sentence of subdivision (c) of this section are met in all other respects.

(e) "Person" means an individual, partnership, corporation, association, or other legal entity.

(f) "Dealer" means a person who sells or offers for sale to consumers within this state a beverage in a beverage container, including an operator of a vending machine containing a beverage in a beverage container.

(g) "Operator" of a vending machine means equally its owner, the person who refills it, and the owner or lessee of the property upon which it is located.

(h) "Distributor" means a person who sells beverages in beverage containers to a dealer within this state, and includes a manufacturer who engages in such sales.

(i) "Manufacturer" means a person who bottles, can, or otherwise places beverages in beverage containers for sale to distributors, dealers, or consumers.

(j) "Within this state" means within the exterior limits of the state of Michigan, and includes the territory within these limits owned by or ceded to the United States of America.

(k) "Commission" means the Michigan liquor control commission.

(l) "Sale or consumption area" means the premises within the property of the dealer or of his lessor where the sale is made, within which beverages in returnable containers may be consumed without payment of a deposit, and, upon removing a beverage container from which, the customer is required by the dealer to pay the deposit.

Sec. 2. (1) A dealer shall not, within this state, sell, offer for sale, or give to consumers a nonreturnable container or a beverage in a nonreturnable container.

(2) A dealer who regularly sells beverages for consumption off his premises shall provide on his premises, or within 100 yards of the premises on which he sells or offers for sale a beverage in a returnable container, a convenient means whereby the containers of any kind, size, and brand sold or offered for sale by him may be returned by, and the deposit refunded in cash to, a person whether or not the person is the original customer of that dealer, and whether or not the container was sold by that dealer.

(3) Regional centers for redemption of returnable containers may be established in addition to, but not as substitutes for, means for refund of deposits in accordance with subsection (2).

(4) A dealer shall not refuse to accept from a person an empty returnable container of any kind, size, and brand sold by that dealer, nor refuse to pay to the person its full refund value in cash, except as provided in subsections (5) and (7).

(5) A dealer who does not require a deposit on a returnable container when the contents are consumed in the dealer's sale or consumption area shall not be required to pay a refund for accepting that empty container.

(6) A distributor shall not refuse to accept from a dealer an empty returnable container of any kind, size, and brand sold by that distributor, nor refuse to pay to the dealer its full refund value in cash, except as provided in subsection (7).

(7) Every beverage container sold or offered for sale by a dealer within this state shall clearly indicate by embossing or by a stamp, or by a label or other method securely affixed to the beverage container, the refund value of the container and the name of this state. A dealer or distributor may, but is not required to, refuse to accept from a person an empty returnable container which does not state thereon the refund value of the container and the name of this state.

(8) A dealer within this state shall not sell, offer for sale, or give to consumers a metal beverage container, any part of which becomes detached when opened.

Sec. 3. (1) To promote the use in this state of reusable beverage containers of uniform design, and to facilitate the return of containers to manufacturers for reuse as a beverage container, the commission shall certify beverage containers which satisfy the requirements of this section.

(2) A beverage container shall be certified if:

(a) It is reusable as a beverage container by more than 1 manufacturer in the ordinary course of business.

(b) More than 1 manufacturer will in the ordinary course of business accept the beverage container for reuse as a beverage container and pay the refund value of the container.

(3) The commission shall not certify more than 1 beverage container of a particular manufacturer in each size classification. The commission shall by rule establish appropriate size classifications in accordance with the purposes set forth in subsection (1), each of which shall include a size range of at least 3 liquid ounces.

(4) A beverage container shall not be certified under this section:

(a) If by reason of its shape or design, or by reason of words or symbols permanently inscribed thereon, whether by engraving, embossing, painting, or other permanent method, it is reusable as a beverage container in the ordinary course of business only by a manufacturer of a beverage sold under a specific brand name.

(b) If the commission finds that its use by more than 1 manufacturer is not of sufficient volume to promote the purposes set forth in subsection (1).

(5) Unless an application for certification under this section is denied by the commission within 60 days after the application is filed, the beverage container shall be deemed certified.

(6) The commission may at any time review certification of a beverage container. If, upon the review, after written notice and hearing afforded to the person who filed the original application for certification of the beverage container under this section, the commission determines that the beverage container is no longer qualified for certification, it shall withdraw certification. Withdrawal of certification shall be effective on a date specified by the commission, but not less than 30 days after written notice to the person who filed the original application for certification of the beverage container under this section, and to the manufacturer referred to in subsection (2).

Sec. 4. A dealer, distributor, or manufacturer who violates this act shall be fined not less than \$100.00 nor more than \$1,000.00 and costs of prosecution. Every day a violation occurs is a separate offense.

Sec. 5. Act No. 142 of the Public Acts of 1971, being section 445.191 of the Compiled Laws of 1970, is repealed.

Sec. 6. This act shall take effect two years after it becomes law.

1978

INITIATION OF LEGISLATION

A petition to initiate legislation to provide for the use of returnable containers for soft drinks, soda water, carbonated natural or mineral water or other non-alcoholic carbonated drink; beer, ale or other malt drink of whatever alcoholic content.

(The full text of the proposed Act appears on the reverse side of this petition.)

We the undersigned qualified and registered electors, residents in the county of _____ State of Michigan, hereby respectively petition for said initiation of legislation.

WARNING

Whoever knowingly signs this petition more than once, signs a name other than his own, signs when not a qualified and registered elector, or sets opposite his signature on a petition, a date other than the actual date such signature was affixed, is violating the provisions of the Michigan Election Law.

INDICATE CITY OR TOWNSHIP IN WHICH REGISTERED TO VOTE		NAME	STREET NO. (IN CITIES AND TOWNSHIPS HAVING STREET NOS., OTHERWISE N. N. NOS.)	POST OFFICE	DATE OF SIGNING		
CITY OF TOWNSHIP OF					MONTH	DAY	YEAR
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<input type="checkbox"/>	<input type="checkbox"/>	14					
<input type="checkbox"/>	<input type="checkbox"/>	15					

CERTIFICATE OF CIRCULATOR

I, the circulator of this petition, assert that I am qualified to circulate this petition, that each signature on the petition was signed in my presence, that to my best knowledge and belief each signature is the genuine signature of the person purporting to sign the same and that the person was at the time of signing a qualified registered elector of the city or township indicated preceding the signature and that the elector was qualified to sign the petition.

WARNING — Any circulator knowingly making a false statement in the above certificate or any person not a circulator who signs as such or any person who signs a name other than his own as circulator is guilty of a misdemeanor.

(SIGNATURE OF CIRCULATOR) _____

(CITY OR TOWNSHIP WHERE REGISTERED) _____

COMPLETE ADDRESS (STREET AND NUMBER OR RURAL ROUTE | POST OFFICE) _____

(DATE) _____

CIRCULATOR — Do not sign or date certificate until after circulating petition.

INSTRUCTION TO CIRCULATORS

A circulator must be a registered voter in Michigan. A circulator must not sign a petition until after all of the signatures he intends to obtain have been affixed to the petition. The name of the county in which the petition is circulated must be entered by the circulator in the blank provided. Women

signing the petition should be instructed to use the signatures they would employ on any legal document (e.g., Mary Doe -- not Mrs. John Doe). NOTE: All signers of the petition must be registered voters of the county designated on the petition. Note: Sign and return all petitions even if partially completed to MUCC - Box 2235, Lansing 48911, PH. 517-371-1041.

SOUTH DAKOTA

owned or operated for any of the purposes stated in the definition in this section for "property held out to the public for the transaction of business" but excludes state highway rights of way and rest areas located thereon.

Source: SL 1974, ch 242, § 8.

See Ill Rev Stat, ch 38, § 86-10.

34-16C-7. Placement and specifications of receptacles on state property.—The secretaries of the departments of transportation and game, fish and parks shall promulgate rules and regulations governing the placement and specifications of litter receptacles on property under their respective jurisdictions.

Source: SL 1974, ch 242, § 9; 1976, ch 214, § 5.

See Ill Rev Stat, ch 38, § 86-10.

Amendments.

The 1976 amendment deleted a first sentence which read "The secretary of the department of transportation, the secretary of the department of game, fish and parks and the secre-

tary of the department of environmental protection shall prescribe the type or types of litter receptacles to be placed on property under the jurisdiction of their respective departments"; inserted "and specifications" and "litter" in the remaining sentence; and made a minor change in phraseology.

34-16C-8. Failure to provide sufficient receptacles as misdemeanor—Penalty.—Any person who fails to comply with the requirements of § 34-16C-5 shall be guilty of a misdemeanor and shall be punishable by a fine of not less than twenty-five dollars nor more than one hundred dollars.

Source: SL 1974, ch 242, § 9; 1976, ch 214, § 9.

See Ill Rev Stat, ch 38, § 86-10.

Amendments.

The 1976 re-enactment substituted the reference to § 34-16C-5 for language limiting the section to instances where the owner had provided recep-

tacles but an inadequate number; deleted language allowing ten days after notice from the appropriate law enforcement agency; changed the fine from \$25 for each receptacle to a minimum of \$25 and a maximum of \$100; and made numerous minor changes in phraseology.

34-16C-9. Reusable, recyclable or biodegradable containers required—Establishment of standards.—No beverage container shall be sold or offered for sale in this state, subsequent to July 1, 1978, unless it is reusable, recyclable or biodegradable. The secretary may, by rule, establish standards to implement the provisions of this section.

Source: SL 1974, ch 242, § 2; 1976, ch 214, § 6.

Amendments.

The 1976 amendment postponed the effective date from 1976 to 1978;

inserted "recyclable"; substituted the second sentence for a phrase at the end of the first sentence reading "according to standards to be established by the secretary"; and made minor changes in phraseology.

0-4-71

ORDINANCE
OF THE COUNCIL OF THE CITY OF BOWIE, MARYLAND
REPEALING AND RE-ENACTING WITH AMENDMENTS
AN ORDINANCE PROHIBITING THE SALE OF CERTAIN
NON-RETURNABLE OR DISPOSABLE BEVERAGE CONTAINERS
WITHIN THE CITY OF BOWIE

WHEREAS, the sale of certain beverage containers was heretofore prohibited within the City of Bowie, and

WHEREAS, the Council of the City of Bowie has deemed it in the best interest of the environmental protection of the residents of the City of Bowie to amend that ordinance;

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Bowie that Ordinance 0-6-70 which prohibits the sale of certain non-returnable or disposable beverage containers within the City of Bowie, is hereby repealed and re-enacted with amendments as follows:

Section 1. It shall be unlawful and an offense for any person to sell, offer for sale, or attempt to sell any malt beverage or soft drink beverage in a container on which a deposit of at least \$.05 is not charged at the retail level and on which the deposit is not returned when the container is returned to the retail outlet except containers filled on order at the retail level.

Section 2. For the purposes of this ordinance, the following terms, phrases, words, and their derivations shall have the meaning given herein:

a. Beverage(s) shall mean:

1. Soft Drink Beverage -- Soft drink beverages means ginger ale, root beer, sarsaparilla, pop, any mineral waters, soda waters, cola, or other carbonated or non-carbonated beverages, artificial mineral waters in liquid form commonly known as soft drinks. Soft drink beverage does not include dairy products or fruit juices.

2. Malt Beverages -- Malt beverages are any beverage obtained by alcoholic fermentation or an infusion or decoction of barley, malt and hops, or other wholesome grain or cereal, and water. Examples shall include but not be limited to beverages commonly referred to as beer, ale, stout, porter, or malt liquor.

b. City shall mean the corporate limits of the City of Bowie.

c. City Manager shall mean the City Administrator (Manager) of the City of Bowie or his designee.

d. Container shall mean any device made of glass, metal, plastic, or other material which directly holds or contains malt beverages or soft drinks.

- e. - Sale shall mean a commercial transaction by any person, firm, individual, corporation, partnership, or vendor whereby beverages are sold directly to the public for a monetary consideration for the purpose of consumption.

Section 3. Inspection

The City Manager, or his designee, shall have the authority to enter upon the premises of any firm, individual, corporation, partnership or vendor selling beverages and which is licensed to conduct a business under the laws of this state, for the purpose of performing inspections to determine if said firm, individual, corporation, partnership or vendor is in compliance with the provisions of this Ordinance.

Section 4. Violations

Any firm, individual, corporation, partnership or vendor selling beverages within the City, found guilty of violating any provision of this Ordinance, shall be guilty of a misdemeanor and shall be punished by a fine not exceeding one hundred dollars (\$100.00) or imprisonment for thirty days (30) or both such fine and imprisonment. Each day's violation of the provisions of this Ordinance shall constitute a separate offense.

Section 5. Severability

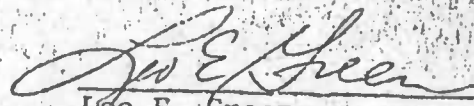
The provisions of this Ordinance are hereby declared to be severable and if any provision, sentence, clause, section or part thereof is held illegal, invalid, unconstitutional or inapplicable to any person or circumstance, such illegality, invalidity, unconstitutionality or inapplicability shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts of this Ordinance or their application to persons and circumstances.

Section 6. Effective Date

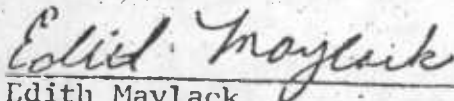
This Ordinance shall take effect at the expiration of twenty (20) calendar days following its passage.

INTRODUCED by the Council of the City of Bowie, Maryland at a regular meeting on February 16, 1970.

PASSED by the Council of the City of Bowie, Maryland at a regular meeting on Monday, March 8, 1971.


Leo E. Green
Mayor

Attest:


Edith Maylack
City Clerk

re. original bill
COUNTY COUNCIL
OF
HOWARD COUNTY, MARYLAND
1971 Legislative Session, Legislative Day No. 3
Council Bill No. 7

AN ACT to add new Sections 15.100, 15.101, and 15.102 to Title 15 of the Howard County Code, title "Natural Resources", subtitle "Environmental Control", prohibiting the sale of certain non-returnable or disposable beverage containers within Howard County, Maryland, and further providing for penalties for violations of this Act.

WHEREAS, the use of certain disposable beverage containers and their consequent disposal is producing an adverse effect upon the environment which is injurious to the health, safety, comfort, convenience, welfare and happiness of residents of this County; and

WHEREAS, the County Council deems it in the public interest to prohibit the sale of certain non-returnable or disposable containers within Howard County Maryland, in an effort to curtail the steady degradation of the natural environment;

Section 1. *Be it enacted by the County Council of Howard County, Maryland, That* Section 15.100, 15.101, and 15.102 be and the same are hereby added to Title 15 of the Howard County Code, title "Natural Resources", subtitle "Environmental Control", to read as follows:

15.100 – Prohibited Sales

The sale of certain non-returnable or disposable beverage containers as herein defined is hereby prohibited within Howard County, Maryland.

15.101 – Definitions

For the purposes of this Act, the following terms, phrases, words and their derivations shall have the meaning given herein:

(a) *Beverages(s)* shall mean carbonated and non-carbonated non-alcoholic beverages commonly known as "soft drinks", beer and malt liquors, by whatever name known.

(b) *Non-returnable or disposable beverage container* shall mean any container made of glass or metal OR PLASTIC used for the purpose of containing beverage(s) upon the sale of which the seller does not charge a deposit. A MINIMUM DEPOSIT OF 5 CENTS payable upon the return of the container, but instead title thereto passes with the sale of the contents of the container.

(c) *Sale* shall mean a commercial transaction whereby beverages are exchanged for

1 a monetary consideration.

2 15.102 - Penalties for Violations

3 Any person found guilty of violating this Act shall be guilty of a misdemeanor
4 and shall be punished by a fine not exceeding One Hundred Dollars (\$100.00).

5 Each day's violation of the provisions of this act shall constitute a separate
6 offense.

7 Section 2. *And be it further enacted by the County Council of Howard County,*
8 *Maryland,* That the provisions of this Act are hereby declared to be severable and if any
9 provision, sentence, clause, section or part thereof is held illegal, invalid, unconstitutional or
10 inapplicable to any person or circumstance, such illegality, invalidity, unconstitutionality or
11 unapplicability shall not affect or impair any of the remaining provisions, sentences, clauses,
12 sections or parts of this Act or its application to persons and circumstances.

13 Section 3. *And be it further enacted by the County Council of Howard County,*
14 *Maryland,* That this act shall take effect ~~sixty (60) days after it stands enacted.~~ JULY 2, 1971.
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29 This Bill, having received neither the approval nor the disapproval of the Executive within
30 ten (10) days of its presentation, stands enacted on February 13, 1971.
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William S. Hanna
4066 St. John's Lane
Ellicott City, Md. 21043

PUBLIC HEARING 7/21/76
COUNCIL ACTION 8/2/76
EXEC. ACTION 8/6/76
EFFECTIVE DATE 12/4/76

COUNTY COUNCIL
OF
HOWARD COUNTY, MARYLAND

19 76 Legislative Session

Legislative Day No. 26
7/6/76

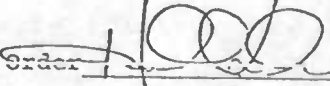
BILL NO 26

Introduced by: Mr. Knowles and Ms. Thomas

Co-Sponsored by: _____

AN ACT to repeal and re-enact with amendments Sections 15.400, 15.401, 15.402, and 15.403 and 15.404 of Title 15 of the Howard County Code, title "Natural Resources," subtitle "Environmental Control," and to add new Section 15.405 through 15.413, requiring that certain refund values be charged on certain beverage containers sold in Howard County, Maryland; requiring the payment of said refund values to the Purchasers by the Sellers thereof; authorizing the refusal by the Seller to accept certain empty beverage containers; requiring certain markings on certain beverage containers; prohibiting the sale of certain metal beverage containers on-and-after-a-certain-date; at a future time; prohibiting the sale of certain devices connecting beverage containers on-and-after-a-certain-date; at a future time; prohibiting the sale of non-refillable beverage containers on-and-after-a-certain-date; at a future time; authorizing the Director of Public Works to certify and decertify beverage containers for sale; setting out definitions of certain words used in the Act and providing penalties for violations of the Act; and relating generally to the sale of beverage containers in Howard County, Maryland.


Introduced, read first time, ordered posted and public hearing scheduled.

By Order  Executive Secretary

HOWARD C. LANDAU

PUBLIC HEARING

Having been posted and Notice of Time and Place of hearing and Title of Bill having been published according to Charter, a public hearing was held on 7/21/76 and continued to 7/21/76 and concluded on _____.

By Order  Executive Secretary

HOWARD C. LANDAU

New Material
Delete

1 WHEREAS, the use of certain beverage containers, the means of
2 packaging said containers and their disposal is producing
3 an adverse effect upon the environment and upon the refuse
4 disposal facilities of the County, which is injurious to
5 the health, safety, comfort, convenience and welfare of
6 the residents of this County; and

7 WHEREAS, the County Council deems it in the public interest to
8 control the sale of certain beverage containers within
9 Howard County, Maryland, in an effort to curtail the
10 steady degradation of the natural environment and to re-
11 lieve the refuse disposal facilities of the County;
12 therefore:

13 Section 1. Be it enacted by the County Council of Howard
14 County, Maryland, that Sections 15.400, 15.401, 15.402, 15.403 and
15 15.404 of Title 15 of the Howard County Code, Title "Natural
16 Resources," Subtitle "Environmental Control," be and they are
17 hereby repealed and re-enacted with amendments and that new Sections
18 15.405 through ~~15.411~~ 15.413 be and they are hereby added thereto
19 to read as follows:

20 Section 15.400 - Definitions

21 For the purposes of this Act, unless the context requires
22 otherwise, the following words have the meanings given herein:

23 (a) "Beverage" means beer or other malt beverages
24 and mineral waters, soda water and similar soft drinks in liquid
25 form and intended for human consumption, whether or not carbonated,
26 but does not include uncarbonated water, soups, fluid milk products,
27 natural or partially natural reconstituted or frozen fruit, veget-
28 able or meat juices, or liquids intended for medicinal purposes
29 only.

30 (b) "Beverage container" means the individual,
31 separate, sealed glass, metal or plastic bottle, can, jar or carton
32 containing a beverage.

New Material
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(1)

1 (c) "Biodegradable material" means material which
2 is capable of being broken down by bacteria into basic elements.

3 (d) "Consumer" means every person who purchases a
4 beverage in a beverage container for use or consumption.

5 (e) "Dealer" means every person in Howard County
6 who engages in the sale of beverages in beverage containers to a
7 consumer, and includes every person in Howard County who engages
8 in the business of servicing and replenishing coin-operated vend-
9 ing machines in which beverages are sold in beverage containers.
10 However, "dealer" does not mean a church, school, political, civic
11 or charitable group or organization

12 (f) "Director" means the Director of the Department
13 of Public Works of Howard County or his designee.

14 (g) "Distributor" means every person who engages in
15 the sale of beverages in beverage containers to a dealer in Howard
16 County including any manufacturer who engages in such sales.

17 (h) "Manufacturer" means every person bottling,
18 canning or otherwise filling beverage containers for sale to dis-
19 tributors or dealers.

20 (i) "Place of business" means the location at which
21 a dealer sells or offers for sale beverages in beverage containers
22 to consumers.

23 (j) "Refillable" means a beverage container which
24 can be refilled at least five times and is so designated by type
25 by the director.

26 (k) "Soft drink" means ginger ale, root beer, sar-
27 saparilla, soda pop or any soda water, cola or other carbonated or
28 non-carbonated beverage.

29 (l) "Use or consumption" includes the exercise of
30 any right or power over a beverage incident to the ownership there-
31 of, other than the sale or the keeping or retention of a beverage
32 for the purposes of sale.

1 Section 15.401 - Refund Value Required For Beverage Containers

2 (a) Except as provided in subsection-(b) subsec-
3 tions (b) and (c) of this section, every beverage container sold
4 or offered for sale in Howard County shall have a refund value of
5 not less than five cents. Further, except as provided in sub-
6 section (b), each dealer, distributor or manufacturer who sells
7 in Howard County an identical beverage in two or more different
8 kinds of beverage containers of the same volume, or volumes within
9 two ounces of each other, shall set the same refund value for each
10 beverage container.

11 (b) Every beverage container certified as provided
12 in Section 15.408, sold or offered for sale in Howard County, shall
13 have a refund value of not less than two cents.

14 (c) Sales of beverage containers to distributors
15 or dealers located outside of Howard County are exempt from this
16 subtitle.

17 (d) Other provisions of this section notwithstand-
18 ing, no refund value shall be charged by a dealer in the sale of
19 any beverage container where the contents thereof are to be con-
20 sumed at the place of business of the dealer and ~~it is intended~~
21 WHERE AN UNDERSTANDING EXISTS BETWEEN A DEALER AND A CONSUMER that
22 said container is not to be removed from said place of business.

23 Section 15.402 - Dealers and Distributors Required to Accept and
24 Pay Refund Value For Empty Beverage Containers

25 Except as provided in Section 15.403:

26 (a) A dealer shall not refuse to accept from any person
27 any empty clean beverage containers of the kind, size and brand
28 sold by the dealer, or refuse to pay to that person the refund
29 value of a beverage container as established by Section 15.401.
30 Dealers may encourage persons to return empty beverage containers
31 at specified time, but a dealer shall not refuse to accept empty
32 beverage containers for redemption at his place of business during
33 business hours.

New Material
Delete
NEW MATERIAL

(3)

1 (b) A distributor shall not refuse to accept from
2 a dealer any empty clean beverage containers of the kind, size
3 and brand sold by the distributor, or refuse to pay the dealer
4 the refund value of a beverage container as established by Section
5 15.401.

6 Section 15.403 - Dealers and Distributors Authorized to Refuse to
7 Accept Certain Empty Containers

8 A dealer may refuse to accept from any person, and a
9 distributor may refuse to accept from a dealer any empty beverage
10 container which does not state thereon a refund value as established
11 by Section 15.401 and the words "Howard County."

12 Section 15.404 - Certain Markings Required on Beverage Containers

13 (a) Every beverage container sold or offered for sale in
14 Howard County by a dealer shall clearly indicate by embossing or
15 by a stamp, or by a label or other method securely affixed to the
16 beverage container, the words "Howard County" and the refund value
17 of the container in not less than one-quarter inch type size.

18 (b) Subsection (a) of this section shall not
19 apply to glass beverage containers designed for beverages having
20 a brand name permanently marked thereon which, on the effective
21 date of this Act, has a refund value of not less than five cents.

22 Section 15.405 - Certain Metal Beverage Containers Prohibited

23 ~~On-and-after-March-17-1977,-no~~ No person shall sell or
24 offer for sale in Howard County any metal beverage container so
25 designed and constructed that a part of the container is detachable
26 in opening the container without the aid of a can opener.

27 Section 15.406 - Certain Plastic Connecting Devices Prohibited

28 ~~On-and-after-March-17-1977,-no~~ No person shall sell or
29 offer for sale in Howard County any beverage containers connected
30 to each other with plastic rings or similar devices which are not
31 classified as biodegradable by the director.

32 *New Material*
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((4))

1 Section 15.407 - Non-Refillable Beverage Containers Prohibited

2 ~~On or after June 17, 1978, no~~ No person shall sell or offer
3 for sale in Howard County any beverage containers not designated
4 as refillable by the director.

5 Section 15.408 - Authorization to Certify Certain Beverage
6 Containers

7 (a) To promote the use in Howard County of re-
8 usable beverage containers of uniform design, and to facilitate
9 the return of containers to manufacturers for reuse as a beverage
10 container, the director may certify beverage containers which
11 satisfy the requirements of this section.

12 (b) A beverage container may be certified if:

13 (1) It is reusable as a beverage container
14 by more than one manufacturer in the ordinary course of business;
15 and

16 (2) More than one manufacturer will in the
17 ordinary course of business accept the beverage container for
18 reuse as a beverage container and pay the refund value of the
19 container.

20 (c) The director may by rule establish appropri-
21 ate liquid capacities and shapes for beverage containers to be
22 certified or decertified in accordance with the purposes set
23 forth in subsection (a) of this section.

24 (d) A beverage container shall not be certified
25 under this section if by reason of its shape or design, or by
26 reason of words or symbols permanently inscribed thereon, whether
27 by engraving, embossing, painting or other permanent method, it
28 is reusable as a beverage container in the ordinary course of
29 business only by a manufacturer of a beverage sold under a
30 specific brand name.
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New Material
Delete

1 Section 15.409 - Granting Certification of Beverage Containers,
2 Review and Withdrawal of Certification Granted

3 (a) Unless an application for certification under
4 Section 15.408 is denied by the director within 60 days after the
5 filing of the application, the beverage container shall be
6 deemed certified.

7 (b) The director at any time may review certifi-
8 cation of a beverage container. If after such review, with written
9 notice and hearing afforded to the person who filed the application
10 for certification under Section 15.408, the director determines
11 the container is no longer qualified for certification, he shall
12 withdraw certification.

13 (c) Withdrawal of certification shall be effec-
14 tive not less than 30 days after written notice to the person who
15 filed the application for certification under Section 15.408 and
16 to the manufacturers referred to in subsection (b) of Section
17 15.408.

18 Section 15.410 - Certification and Withdrawal Procedures

19 The procedures for certification or withdrawal
20 of certification provided for in Sections 15.408 and 15.409 shall
21 be in accordance with the Howard County Administrative Procedure
22 Act.

23 Section 15.411 - Penalties

24 Any person found guilty of violating this Act
25 shall be guilty of a misdemeanor and shall be punished by a fine
26 not to exceed One Hundred Dollars (\$100.00). Each day of viola-
27 tion shall constitute a separate offense.

28 Section 15.412 - Authority to Study and Report on Effectiveness
29 of this Act

30 (a) During the period commencing on the enforce-
31 ment date of this Act, and ending when he submits the report
32 provided for in subsection (b) of this section, the County Execu-

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(6)

1 tive shall cause to be conducted a study of the operation of the
2 provisions of this Act that shall include, but not be limited to,
3 an analysis of:

4 (1) The problems if any, incurred in the distri-
5 bution, sale and return of beverage containers subject to the
6 provisions of this Act, including the effect, if any, on tax
7 revenues accruing to Howard County;

8 (2) The effectiveness of the provisions of this
9 Act in reducing energy consumption, solid waste and the incidence
10 of the littering by beverage containers in Howard County;

11 (3) The effect of the provisions of this Act on
12 consumer beverage prices;

13 (4) The degree of consumer acceptance of the
14 provisions of this Act;

15 (5) The costs incurred in the enforcement of the
16 provisions of this Act.

17 (b) Not later than twelve (12) months following
18 the enforcement date of this Act, the County Executive shall
19 prepare and submit to the County Council a report of his findings
20 made pursuant to subsection (a) of this section and his recommenda-
21 tions with respect to any legislative proposals considered by him
22 to be necessary as the result of the study conducted as required
23 by subsection (a) of this section.

24 Section 15.413 - Enforcement Date

25 (a) The enforcement of the subtitle, except for
26 Sections 15.405, 15.406 and 15.407, shall not take effect until
27 July- JANUARY 1, 1977.

28 (b) Sections 15.405 or 15.406 or 15.407 of this
29 subtitle severally or together shall take effect when two(2) count-
30 ies contiguous to Howard County enact substantially similar
31 legislation.
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(7)

1 Section 2. And be it further enacted by the County Council of
2 Howard County, Maryland, that the provisions of this Act are hereby
3 declared to be severable; and if any provision, sentence, clause,
4 section or part thereof is held illegal, invalid, unconstitutional
5 or inapplicable to any person or circumstance, such illegality,
6 invalidity, unconstitutionality or inapplicability shall not affect
7 or impair any of the remaining provisions, sentences, clauses,
8 sections or parts of this Act or its application to persons and
9 circumstances.

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11 Section 3. And be it further enacted by the County Council of
12 Howard County, Maryland, that this Act shall take effect sixty
13 (60) days after its enactment.
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BY THE COUNCIL:

READ THE THIRD TIME

BILL NO. 26

PASSED August 2, 1976 - Amended

FAILED OF PASSAGE _____

BY ORDER

Hood

SECRETARY

SEALED WITH THE COUNTY SEAL AND PRESENTED TO THE COUNTY

EXECUTIVE FOR HIS APPROVAL THIS 3rd DAY OF August 1976

AT 2:00 O'CLOCK P.M.

Hood

SECRETARY

APPROVED:

ENACTED

8/6/76

(DATE)

Edward J. Cochran

COUNTY EXECUTIVE

BY THE COUNCIL

THIS BILL HAVING BEEN APPROVED BY THE EXECUTIVE AND RETURNED TO
THE COUNCIL STANDS ENACTED ON August 6 1976.

Hood

SECRETARY

COUNTY
COUNCIL
OF
HOWARD COUNTY

60 days

Introduced: December 17, 1974
Enacted: December 2, 1975
Executive: December 15, 1975
Effective: February 29, 1976

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND
December Legislative Session 1974

Chapter 23

AN ACT to add a new Chapter 6A, title "Beverage Containers," to the Montgomery County Code 1972, as amended, to follow immediately after Chapter 6 thereof, to provide that non-reusable beverage containers in which beverages are sold or offered for sale in Montgomery County after January 1, 1978, shall have a specified minimum cash refund value; to require the acceptance for refund of such containers by dealers and distributors; to require certain markings on such containers; to prohibit the sale after January 1, 1978 of any metal non-reusable beverage container with a metal opening completely detachable from the container without the aid of a can opener, other than screw tops and bottle caps; to provide for the application of this Act within certain municipalities under certain conditions; to require certain reporting by the County Executive; to provide penalties for violation of this Act; to define terms used in this Act; and to relate generally to the sale of beverages in non-reusable beverage containers in Montgomery County.

Be It Enacted by the County Council for Montgomery County, Maryland, that -

Sec. 1. There is hereby added to the Montgomery County Code 1972, as amended, a new Chapter 6A, title "Beverage Containers", to follow immediately after Chapter 6 thereof, and to read as follows:

6A-1. Purpose.

The purposes of this Chapter are:

(a) To promote the public health, safety and welfare of the citizens of Montgomery County by offering an incentive for the reduction of the amount of litter in public areas of the County, a large portion of which litter consists of discarded beverage containers; and

(b) To relieve the refuse disposal facilities of the County of a large portion of the burden of disposing of beverage container litter. Nothing contained in this Chapter shall in any way affect, be construed to affect, or be in conflict with the regulation of alcoholic beverages in accordance with Article 2B of the Annotated Code of Maryland.

6A-2. Definitions.

For the purposes of this Chapter the following words and phrases shall have the meanings respectively ascribed to them by this Section:

- (a) "Beverage" means beer, ale or other malt beverages, soft drinks, carbonated water and ice tea in liquid form and intended for human consumption.
- (b) "Soft drink" means ginger ale, root beer, sarsaparilla, pop, any soda water, cola, or other carbonated or non-carbonated beverages. The term "soft drink" does not include dairy products or fruit juices.
- (c) "Non-reusable beverage container" means any individual, separate, sealed glass, metal, or plastic bottle, can, jar or carton containing a beverage which is not ordinarily collected from consumers for refilling with a beverage.
- (d) "Consumer" means every person who purchases a beverage in a non-reusable beverage container for use or consumption, without intent to resell.
- (e) "Dealer" means every person who engages in the sale of beverages in non-reusable beverage containers to a consumer in Montgomery County, including any manufacturer who engages in such sales.
- (f) "Distributor" means every person who engages in the sale of beverages in non-reusable beverage containers to a dealer in Montgomery County, including any manufacturer who engages in such sales.
- (g) "Manufacturer" means every person bottling, canning or otherwise filling non-reusable beverage containers for sale to distributors or dealers.
- (h) "Greater Washington area" means those jurisdictions within the exterior limits of the Washington, D.C. Standard Metropolitan Statistical Area as defined by the United States Department of Commerce, Bureau of Census, which have enacted provisions similar to the provisions of this Chapter.

6A-3. Refund value required.

Beginning January 1, 1978 every non-reusable beverage container in which beverages are sold or offered for sale in Montgomery County shall have a minimum cash refund value of 5¢.

6A-4. Acceptance for refund.

(a) Beginning January 1, 1978 a dealer shall not refuse to accept from any person any empty non-reusable beverage containers marked pursuant to Section 6A-5 of this Chapter of the kind, size and brand of beverage sold by the dealer, or refuse to pay in cash to the consumer the refund value of a non-reusable beverage container established pursuant to Section 6A-3 of this Chapter if the empty non-reusable beverage container is presented at the location at which the dealer sells or offers for sale such beverages in non-reusable beverage containers to consumers, provided that for the purposes of this Section "dealer" shall not include persons selling beverages to consumers for on-premises consumption.

(b) Beginning January 1, 1978 a distributor shall not refuse to accept from a dealer any empty non-reusable beverage container marked, pursuant to Section 6A-5 of this Chapter, of a kind, size and brand of beverage sold by the distributor, or refuse to pay in cash to the dealer the refund value of a non-reusable beverage container as established pursuant to Section 6A-3 of this Chapter, if the empty non-reusable beverage containers are presented at the time and location of any delivery of filled non-reusable beverage containers by the distributor to the dealer.

6A-5. Non-reusable beverage container markings.

Beginning January 1, 1978 no distributor or dealer shall sell or offer for sale in Montgomery County a beverage in a non-reusable beverage container that does not clearly indicate in a securely affixed manner the following information:

(a) The non-reusable beverage container is to be sold within the greater Washington area, and

(b) The refund value of the non-reusable beverage container is not less than the minimum amount specified in Section 6A-3 of this Chapter.

6A-6. Metal non-reusable beverage containers with detachable openings; prohibited.

Beginning January 1, 1978 no person shall sell or offer for sale in Montgomery County any metal non-reusable beverage container so designed and constructed that a metal part of the container is completely detachable from the container without the aid of a can opener, other than screw tops and bottle caps.

6A-7. Penalty for violations of Chapter.

Any violation of the provisions of this Chapter shall, upon conviction thereof before a court of competent jurisdiction, be punished by a fine of not more than \$50. Every day a violation of the provisions of this Chapter continues to exist shall constitute a separate offense. In addition thereto, the County may institute injunctive or other appropriate action or proceedings at law or equity for the enforcement of and to correct violations of this Chapter, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions or other appropriate forms of remedy and relief.

6A-8. Application.

This Chapter shall be effective throughout Montgomery County except in any incorporated town, village or other municipality which by law has been granted express authority to regulate the same subject covered in this Chapter. If any such incorporated town, village or other municipality shall adopt this Chapter and request the County to enforce the provisions thereof within its corporate limits, the County shall thereafter administer and enforce the same within such incorporated town, village or municipality.

6A-9. Additional information.

The County Executive is hereby requested to investigate throughout the greater Washington area and jurisdictions adjacent to Montgomery County the progress in developing and passing legislation similar to this law, and evaluations of the effectiveness of any such beverage container legislation, and to report to the Council no later than January 1, 1977, and June 30, 1977, on such progress, and actions he has taken or proposes to take to insure regional and State-wide legislation of a similar nature.

Sec. 2. Severability.

The provisions of this Act are severable and if any provision, clause, sentence, section, word or part thereof is held illegal, invalid or unconstitutional or inapplicable to any person or circumstances, such illegality, invalidity or unconstitutionality, or inapplicability, shall not affect or impair any of the remaining provisions, clauses, sentences, sections, words or parts of the Act or their application to other persons or circumstances. It is hereby declared

to be the legislative intent that this Act would have been adopted if such illegal, invalid, or unconstitutional provision, clause, sentence, section, word or part had not been included therein, and if the person or circumstances to which the Act or part thereof is inapplicable had been specifically exempted therefrom.

Sec. 3. Effective date.

This Act shall take effect on the 76th day following the date on which it becomes law.

Approved:

<p><u>John L. Menke</u> Vice President, Montgomery County Council</p>	<p><u>December 5, 1975</u> Date</p>
<p><u>[Signature]</u> County Executive</p>	<p><u>12-11-1975</u> Date</p>

ATTEST:

<p><u>[Signature]</u> Secretary of the County Council</p>	<p><u>Dec 15 1975</u> Date</p>
---	------------------------------------

By: The Annapolis Environmental Commission

A RESOLUTION

A RESOLUTION to endorse the concept of the elimination of non-returnable bottles and all matters relating generally.

WHEREAS, there is now nationwide concern for the cost and limits of our energy resources, and the non-returnable container consumes three times the energy amount per use of the returnable container; and

WHEREAS, there are inflationary costs affecting every consumer, and the cost of producing, marketing and disposing of the non-returnable container are greater than that of the returnable container; and


WHEREAS, environmental pollution is now recognized as everyone's responsibility, and that the non-returnable container is a major single pollutant and aesthetic offense; and

NOW, THEREFORE:


BE IT HEREBY RESOLVED BY THE MAYOR AND ANDERMEN OF THE CITY OF ANNAPOLIS that it endorses the concept of a move toward returnable beverage containers for soft drinks and beer, and that appropriate legislative action be taken at higher governmental levels.

ADOPTED this 10th day of March, 1975.

THE MAYOR AND ALDERMEN OF THE
CITY OF ANNAPOLIS

BY: 
JOHN C. APOSTOL, MAYOR

ATTEST:


Margaret D. Burket, City Clerk

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL
PROTECTION AGENCY

[FRL 605-6]

PART 244—SOLID WASTE MANAGEMENT
GUIDELINES FOR BEVERAGE CONTAINERS

Section 209 of the Solid Waste Disposal Act of 1965 (Pub. L. 89-272), as amended by the Resource Recovery Act of 1970 (Pub. L. 91-512), requires the Administrator of the U.S. Environmental Protection Agency (EPA) to "recommend to appropriate agencies and publish in the FEDERAL REGISTER guidelines for solid waste recovery, collection, separation, and disposal systems. . . . Further, Section 211 mandates that Federal agencies "shall insure compliance with the guidelines recommended under Section 209 and the purpose of this (Solid Waste Disposal) Act."

In fulfillment of its responsibilities under Section 209, EPA promulgated the first set of guidelines: "Guidelines for the Thermal Processing and Land Disposal of Solid Wastes," on August 14, 1974 (40 CFR 240 and 241). Since that time, guidelines have been promulgated for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste on February 13, 1976 (40 CFR 243); for Source Separation for Material Recovery on April 23, 1976 (40 CFR 246); and for Resource Recovery Facilities in September of 1976 (40 CFR 245). In addition, non-mandatory guidelines for "Procurement of Products that Contain Recycled Material" were published in the FEDERAL REGISTER on January 15, 1976 (40 CFR 247).

These "Beverage Container Guidelines" were first published in proposed form in the FEDERAL REGISTER on November 13, 1975. At that time public comment was solicited and a period of 60 days was provided during which interested parties could make their views known to the Environmental Protection Agency.

The proposed guidelines required that Federal facilities establish a system for the return of beer and soft drink beverage containers in order to achieve the environmental benefits of reduced solid waste and litter and the conservation of energy and material resources. They required that all beverage containers be rendered returnable through the application of a 5 cent deposit as an incentive to the consumer to return empty containers. This refundable deposit was to be paid by the consumer, upon purchase of beverages, and refunded by the dealer when the empty container was returned.

The implicit goal of the proposed guidelines was to gain the desired environmental benefits through reuse or recycling of returned containers. It has become evident, through public and Congressional comments, that this point was not always clearly understood. Therefore, the guidelines now being published attempt to clarify that any type of container is acceptable for use in implementing a returnable beverage container sys-

tem as long as beverage containers are returned and are either reused or recycled, where markets for recyclable materials are available. Changes have also been made to increase the flexibility available to agencies and facilities in implementing such a system to ease the adaptation of the guidelines' requirements to particular, local situations.

The Agency received 5955 responses during the comment period from private citizens, industry representatives, labor unions, environmental groups, and other government agencies. Copies of all responses received on or before January 12, 1976, are available for public inspection at the EPA Public Information Reference Unit (EPA Library), 401 M Street, S.W., Washington, D.C. during normal working hours. In order to facilitate review, the 5955 comments were carefully screened to identify the issues raised in each comment. Similar issues were then organized into groups which were then carefully summarized. These 33 summary issues reflect, but do not repeat verbatim, the views of every respondent who commented on the Proposed Beverage Container Guidelines on or before January 12, 1976. Two other documents are also on file with the EPA Public Information Reference Unit for public review. The first lists each respondent and indicates which respondents commented on each issue. The second explains each issue and presents the EPA responses to all issues raised. Duplicates of those two documents are also available for inspection at the Public Information Reference Unit of the 10 EPA Regional Offices.

The following discussion treats the more important of the 33 issues during the public comment period.

Several of those who commented on the guidelines were concerned with the issue of energy. Many based their objections on the erroneous assumption that these guidelines require the exclusive use of refillable bottles. They suggested that energy consumption under the guidelines would actually increase due to the increased bulk and weight of refillable containers, and resultant increases in transportation requirements. Extensive analyses have shown that refillable bottles, when reused several times, are less energy-intensive than either one-way glass bottles or cans when all factors are considered. Thus the introduction or increased use of refillable bottles on Federal facilities would provide benefits in terms of energy conservation. However, the fact is that the guidelines do not require the use of any particular container type, either implicitly or explicitly. Non-refillable bottles and cans that are returned and recycled also conserve energy. Therefore, regardless of the types of containers used in implementing the guidelines, energy conservation should result.

Other commenters were concerned that the guidelines would have severe adverse effects on employment in the container manufacturing industry. The origin of these concerns is the prediction, in various estimates of the impact of national beverage container legislation,

that a major shift in container mix from cans and nonrefillable bottles to refillable bottles would result from such legislation. Those estimates predict that a shift of national scope away from non-refillable containers would cause the employment dislocations that these commenters fear. However, those impact predictions do not apply here, because the guidelines apply only to Federal facilities. These Federal facilities comprise only two to four percent of the national beverage market widely dispersed across the country. The remaining 96 to 98 percent of the national market would remain unchanged. Thus, even the maximum possible shift to refillable bottles at Federal facilities would have no more impact on the national container mix and, therefore, on employment in the container manufacturing industry, than a slight shift in consumer preference.

Many commenters indicated concern that the guidelines would have severe negative economic impact on some or all segments of the beer, soft drink, and container manufacturing industries and those industries that supply materials to them, as well as on the retail and distribution systems. Those who predict cost increases refer to some studies that have been performed in an attempt to predict the impact of national beverage container legislation. Their basic assumptions are not applicable to the guidelines because virtually all of these studies assume a substantial national shift from nonrefillable containers to refillables that would lead to extensive capital expenditures for new equipment. Again, because these guidelines apply only to the two to four percent of national beverage sales that take place on Federal facilities, it is neither appropriate nor accurate to extrapolate downward from national impact analyses. It is unlikely that any of the capital or other major costs predicted to result from national beverage container legislation would follow implementation of these guidelines, even if the container mix on Federal facilities shifted entirely to refillable bottles. Further, even if unexpected new costs are incurred by beverage producers, bottlers, distributors, or wholesalers, the provisions for nonimplementation described in § 244.100(d) can be applied if those costs preclude the effective achievement of the goals of the guidelines.

Most of those who cite adverse economic impacts anticipate that the ultimate result will be higher prices to consumers. Several others, though, assuming increased availability of beverages in refillable containers, anticipate reduced cost to consumers because refillables are the least expensive container type.

Because no new capital costs are expected to be incurred under the guidelines, no general price increases are expected either. Further, because beverages are less expensive in refillable containers, average beverage prices should be reduced by their increased use.

Some commenters expressed the belief that these guidelines would eliminate freedom of choice in products and pack-

ging offered to Federal government and military personnel. This is not the case. The guidelines neither restrict nor require the use of any specific container type. In fact, others suggested that the guidelines would actually increase the choices available to consumers by increasing the likelihood that refillables will be added to the present container mix because they presently provide the least expensive means for achieving the environmental goals sought.

Some of those who commented indicated concern that, while the proposed guidelines provided for non-implementation due to economic impracticability, the term "economic impracticability" was not defined. This led some to fear that non-implementation could never be justified, while others feared that claims of economic impracticability might be used indiscriminately to justify non-implementation, even where implementation was actually possible. In response to these valid concerns, the guidelines have been modified to clarify the concept of economic impracticability. The final guidelines also explain particular circumstances in which practical considerations would rule out implementation, i.e. situations in which implementation is economically feasible, but would not operate effectively to achieve the goals of the guidelines.

Several commenters were confused by, or indicated concern about the provisions for vending machines in the proposed guidelines. Much of the confusion and concern was justified as those provisions were not clear. The proposed guidelines tried to consider the variety of physical and economic situations in which vending machines are used and prescribe specific requirements for that usage. As revised, the guidelines requirements have been written to allow decisions on vending machine implementation to be made on the basis of particular situations within a facility. Therefore, while the revised guidelines do not treat vending machine beverage sales explicitly, the provisions are sufficiently broad that they cover vending machines implicitly. Decisions for vending machine implementation should be based on the same considerations that are applied to other beverage sales.

Some commenters objected to the assertion in the proposed guidelines that the economic and inflationary impacts of the guidelines would be minor and the Agency's consequent decision that it was not required to prepare an Inflationary Impact Statement. These commenters point to a wide variety of studies and predictions, citing them as proof that increased costs or prices would result from implementation of the guidelines and that these increases would be inflationary. Virtually all of these predictions are highly dependent on the assumption that there would be a substantial national shift to refillable bottles. This is not expected to occur as a result of these guidelines.

The economic and inflationary impacts of the guidelines have been carefully evaluated. It has been determined

that the effects will be minor and that the guidelines are not a "major action" requiring an inflation impact statement as prescribed by Executive Order 11821 and OMB Circular A-107.

Several commenters stated that EPA should withhold action on these guidelines until the subject of returnable beverage containers has been debated by the Congress. This is apparently a view that is not shared by the U.S. Senate. A returnable beverage container amendment proposed by Senator Hatfield to S. 2150, the Solid Waste Utilization Act of 1976, was rejected by the Senate after debate that was limited to 30 minutes. After the vote on this amendment, the following statements were made on the floor of the Senate (Congressional Record, June 30, 1976, p. S11058-S11086):

Mr. Stafford. I think it would be a mistake to view the defeat of the Hatfield amendment as a mandate to the Administrator of the Environmental Protection Agency to halt efforts to initiate innovative programs requiring returnable containers on Federal installations and facilities. Rather, today's vote may more properly be interpreted as a decision by the Senate that it does not want to authorize a nationwide container deposit law at this time.

Just as the bill permits individual States to chart their own courses of action, the Senate this morning has reinforced that principle by rejecting a single Federal standard.

However, the bill permits individual States to enact their own container policies and legislation. In that manner, innovative programs can be tested and demonstrated for study by the entire Nation.

Similarly, the proposal for a returnable container policy at Federal facilities can provide our Nation with valuable information.

Nothing that has happened on the floor of the Senate can properly be interpreted as a mandate from this body to halt that valuable demonstration effort.

Mr. Muskie. Mr. President, rejection of the Hatfield amendment should in no way prejudice EPA's ongoing programs to develop solid waste management programs which may include resource conservation—source reduction programs.

EPA currently has regulations which require deposits on beverage containers sold at Federal facilities. These regulations are new. We are still learning from them. They will continue in effect even without the Hatfield amendment so we can have a real test of the impact and implication of the kind of proposal without the amendment.

Neither of these statements was rebutted.

Following the defeat of his returnable beverage container amendment, Mr. Hatfield introduced an amendment calling for the President, through the cooperation of appropriate Federal agencies to study all aspects of national beverage container deposit legislation. This substitute amendment was passed by a vote of 85-1, with 14 not voting. While these guidelines affect a much smaller and widely dispersed market than would national legislation, information gained through their implementation could clearly be an integral part of such a study. S. 2150 was passed by a vote of 88-3 with 9 not voting.

Future Revisions. Section 209 of the Act states that guidelines "shall be re-

vised from time to time." Following the public comment period, several changes were made to clarify and refine the proposed guidelines. No more changes are planned for the immediate future. Implementation of the guidelines may result in the identification of areas that require refinement or modification. To that end, comments or suggestions are invited from persons with experience in implementing these guidelines or other returnable beverage container systems.

Promulgation. These guidelines are issued under the Authority of Section 209 (a) of the Solid Waste Disposal Act of 1965 (Pub. L. 89-272) as amended by the Resource Recovery Act of 1970 (Pub. L. 91-512). Chapter I of Title 40 of the Code of Federal Regulations is amended effective October 20, 1976 by adding a new Part 244.

Dated: September 10, 1976.

RUSSELL E. TRAIN,
Administrator.

Sec.	Subpart A—General Provisions
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244.201	Use of Returnable Beverage Containers.
244.202	Information.
244.203	Implementation Divisions and Reporting.

Appendix—Recommended Bibliography.

Subpart A—General Provisions

§ 244.100 Scope.

(a) The "Requirement" sections contained herein delineate minimum actions for Federal agencies for reducing beverage container waste.

(b) Section 211 of the Act and Executive Order 11752 make the "Requirements" section of the guidelines mandatory upon Federal agencies. They are recommended for adoption by State and local governments and private agencies.

(c) **Intent and Objectives.**—(1) These Guidelines for Beverage Containers are intended to achieve a reduction in beverage container solid waste and litter, resulting in savings in waste collection and disposal costs to the Federal Government. They are also intended to achieve the conservation and more efficient use of energy and material resources through the development of effective beverage distribution and container collection systems.

(2) The guidelines are intended to achieve these goals by making all beverage containers returnable and encouraging reuse of recycling of the returned containers. To accomplish the return of beverage containers, a deposit of at least five cents on each returnable beverage container is to be paid upon purchase by the consumer and refunded to the consumer when the empty container is returned to the dealer. This refund value provides a positive incentive for consumers to return the empty containers. Once containers are returned, nonrefillable containers can be recycled and refillable bottles can be reused.

(3) The minimum deposit of five cents has been chosen because it is deemed a large enough incentive to induce the return of most containers, and it is the most widely used deposit amount in present deposit systems. Because this action is intended to be compatible with present deposit systems, it is recommended that Federal facilities apply higher deposit levels in localities where higher levels are ordinarily used and lower deposit levels if the local area has an established return system with a minimum deposit level, for some or all beverage containers, of less than five cents.

(4) Final determination of how the requirements of the guidelines will be met rests with the head of each Federal agency.

(5) Federal facilities implementing the guidelines must charge refundable deposits on both refillable beverage containers and nonrefillable ones. Use of a refillable beverage container system will achieve the objectives of this guideline and will also most likely result in lower beverage prices for consumers. However, placing refundable deposits on nonrefillable containers, which are subsequently returned and recycled, also achieves the objectives of the guidelines.

(d) *Nonimplementation for Federal Facilities.*—(1) The objectives of these guidelines are to reduce solid waste and litter and to conserve energy and materials through the use of a return system for beverage containers. In order to have a substantial impact on solid waste and litter created by beverage containers and to effect the concomitant energy and materials savings in a cost-effective manner, three conditions will be necessary: first, that consumers continue to purchase beverages from dealers at Federal facilities; second, that empty containers be returned and then reused or recycled; third, that the costs of implementation are not prohibitive. The head of each agency should consider these factors in order to make a determination regarding implementation of these guidelines.

(2) The Administrator recognizes that the requirements of these guidelines may not be practical at some Federal facilities due to geographic or logistic problems of a local nature. Further, he recognizes that the use of a returnable beverage container system will accomplish nothing if all reasonable efforts to implement such a system have failed to induce consumers to buy beverages in returnable containers or to return them when empty. When these situations persist, agencies may determine not to continue implementation of these guidelines.

(3) Federal agencies that make the determination not to use returnable containers shall provide to the Administrator the analysis and rationale used in making that determination as required by Section 244.100(f)(3). The Administrator will publish notice of availability of this report in the *FEDERAL REGISTER*. The following conditions are considered to be valid reasons for not using returnable beverage containers.

(i) Situations in which, after a trial implementation, there is no alternative

available that results in meeting the objectives of the guidelines in a cost effective manner. Examples of indications of this situation include but are not limited to: (1) data indicating a substantial and persistent reduction in beverage sales that is not directly attributable to any other cause; and (2) failure to establish a beverage container return rate that effectively achieves the objectives of these guidelines.

(ii) Situations in which no viable alternative can be found which avoids excessive, irrecoverable costs to the facility or the Agency. These conditions may prevail at either part or all of a facility. It is expected that facilities will use returnable beverage containers in those portions of their beverage distribution systems where it is effective to do so. However, it is recognized that in some situations, such as for unattended vending machines where it is impractical to establish refund locations, or in small remote outlets where the majority of consumers are transient, it may not be possible to use returnable containers effectively. The provisions for nonimplementation can be applied to those portions of a facility.

(e) The Environmental Protection Agency will render technical assistance and other guidance to Federal agencies when requested to do so pursuant to Section 3(d)(1) of Executive Order 11752.

(f) *Reports.*—(1) *Implementation Schedule Report.* This report is to advise the EPA of plans for the implementation of these guidelines. It is to be submitted to the Administrator within 60 days following an agency's determination to implement, and should include a list of planned implementation actions and a schedule indicating when those actions will be taken.

(2) *Annual Status Report.*—This report will provide information to the Administrator which will enable him to monitor compliance with the guidelines as required by Executive Order 11752. The form of this report will be prescribed by the Administrator at a later time.

(3) *Nonimplementation Report.*—Nonimplementation reports are to be submitted to the Administrator as soon as possible after a final agency determination has been made not to use returnable beverage containers but not later than sixty days after this determination. The Administrator will indicate to the reporting agency his concurrence or nonconcurrence with the agency's decision, including his reasons therefor. This concurrence or nonconcurrence is advisory. Nonimplementation reports should include:

(i) A description of alternative actions considered or implemented, including those actions which, if taken or continued, would have involved a deposit or return system.

(ii) A description of ongoing actions that will be continued and actions taken or proposed that would preclude future implementation of a returnable beverage container system. This statement should identify all agency facilities or categories of facilities that will be affected.

(iii) An analysis in support of the determination not to implement a deposit system, including technical data, market studies, and policy considerations used in making that determination. If the determination not to implement is based on inability to achieve a cost-effective system, this analysis should include such things as sales volume, impact on total overhead costs, administrative costs, other costs of implementation, percentage of containers sold that are returned, solid waste and litter reduction, energy and materials saved, and retail prices (before and after implementation).

§ 244.101 Definitions.

(a) "Beverage" means carbonated natural or mineral waters; soda water and similar carbonated soft drinks; and beer or other carbonated malt drinks in liquid form and intended for human consumption.

(b) "Beverage container" means an airtight container containing a beverage under pressure of carbonation. Cups and other open receptacles are specifically excluded from this definition.

(c) "Consumer" means any person who purchases a beverage in a beverage container for final use or consumption.

(d) "Dealer" means any person who engages in the sale of beverages in beverage containers to a consumer.

(e) "Deposit" means the sum paid to the dealer by the consumer when beverages are purchased in returnable beverage containers, and which is refunded when the beverage container is returned.

(f) "Distributor" means any person who engages in the sale of beverages, in beverage containers, to a dealer, including any manufacturer who engages in such sale.

(g) "Federal Agency" means any department, agency, establishment, or instrumentality of the executive branch of the United States government.

(h) "Federal facility" means any building, installation, structure, land, or public work owned by or leased to the Federal Government. Ships at sea, aircraft in the air, land forces on maneuvers, and other mobile facilities; and United States Government installations located on foreign soil or on land outside the jurisdiction of the United States Government are not considered "Federal facilities" for the purpose of these guidelines.

(i) "On-Premise Sales" means sales transactions in which beverages are purchased by a consumer for immediate consumption within the area under control of the dealer.

(j) "Recycling" means the process by which recovered materials are transformed into new products.

(k) "Refillable Beverage Container" means a beverage container that when returned to a distributor or bottler is refilled with a beverage and reused.

(l) "Refund" means the sum, equal to the deposit, that is given to the consumer or the dealer or both in exchange for empty returnable beverage containers.

(m) "Returnable Beverage Container" means a beverage container for which a deposit is paid upon purchase and for which a refund of equal value is payable upon return.

Subpart B—Requirements

§ 244.200 Requirements.

§ 244.201 Use of Returnable Beverage Containers.

(a) All beverages in beverage containers sold or offered for sale shall be sold in returnable beverage containers. On-premise sales are specifically excluded from this requirement provided that empty beverage containers are returned to the distributor for refilling, or are recycled, either by the dealer or by the distributor when markets for recyclable materials are available.

(b) The deposit shall be at least five (5) cents unless the local area has an established return system in operation with a lower minimum deposit level. In those specific areas, Federal facilities may adopt a minimum deposit equal to the local deposit level.

(c) A dealer shall accept from a consumer any empty beverage containers of the kind, size and brand sold by the dealer, and pay the consumer the refund value of the beverage container, provided the container is refillable or is labelled in accordance with Section 244.202(a).

(d) The refund shall be provided at the place of sale whenever possible or as close to that place as practicable, and in any event, on the premises of the particular federal facility involved. Refund locations shall be conspicuously labelled as refund centers. If they are not in the immediate vicinity of the place of sale, notice of their location shall be prominently posted at that place of sale.

(e) A dealer shall not procure beverages in beverage containers from distributors who refuse to accept from the dealer any returnable beverage containers of the kind, size and brand sold by the distributor; pay to the dealer the refund value of the beverage containers; and reuse the returned containers or recycle them where markets for recyclable materials are available.

(f) Returned refillable beverage containers shall be returned to the distributor for refilling. Nonrefillable beverage containers shall be returned to the appropriate distributor or recycled, where markets for recyclable materials are available.

§ 244.202 Information.

(a) With the exception of refillable beverage containers, every returnable beverage container sold or offered for sale by a dealer shall clearly and conspicuously indicate, by embossing or by

stamp, or by a label securely affixed to the beverage container, the refund value of the container and that the container is returnable.

(b) Dealers shall inform consumers that beverages are sold in returnable beverage containers by placing a sign, or a shelf label, or both, in close proximity to any sales display of beverages in returnable containers. That sign or label shall indicate that all containers are returnable, separately list the beverage price and deposit to be paid by the consumer, and shall indicate where the empty beverage containers may be returned for refund of the deposit.

§ 244.203 Implementation Decisions and Reporting.

Federal agencies are to determine whether or not to implement these guidelines by (date, one year after promulgation in the FEDERAL REGISTER). Reporting of that determination shall be in accordance with the following requirements:

(a) Federal agencies that plan to implement these guidelines shall report that decision to the Administrator in accordance with the procedures described in § 244.100(f)(1).

(b) Implementing agencies shall provide to the Administrator an annual status report in accordance with the procedures described in § 244.100(f)(2).

(c) Agencies that determine not to implement these guidelines shall provide to the Administrator a nonimplementation report in accordance with § 244.100(f)(3). This report shall include the reasons for nonimplementation, based on concepts presented in § 244.100(d), and shall be repeated at least every three years.

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[FR Doc. 76-27390 Filed 9-20-76; 8:45 am]

APPENDIX B

Testimony of Donald Webster, Director of Environmental
Conservation for the State of Vermont Before the Vermont
Subcommittee on the Environment House Commerce Committee

APPENDIX B

4/15/75

STATEMENT OF DONALD W. WEBSTER, DIRECTOR OF ENVIRONMENTAL CONSERVATION,
STATE OF VERMONT, MONTPELIER, VERMONT 05602

TO: (Through Congressman James Jeffords)
Subcommittee on the Environment
House Commerce Committee

My name is Donald W. Webster. I am Director of Environmental Protection, within the Agency of Environmental Conservation of the State of Vermont. I am the principal State official involved in the administration of Vermont's Beverage Container Law.

While Vermont's existing law is a mandatory deposit law only, current pending legislation would ban non-refillable glass containers, flip-top cans, and plastic ring connectors. This legislation has passed our House of Representatives by an overwhelming margin (110 - 31) and is currently pending before the Vermont Senate, where unanimous approval was voted by its Natural Resources Committee.

Vermont's experience with a mandatory deposit law, which does not mandate the use of refillable containers, clearly indicates that this imperfection will not accomplish all of the objectives of proper beverage container legislation. Indeed, the lack of a mandatory refillable provision has permitted the national beverage and container industries to employ various measures to undercut the full effectiveness of the Law's intention, and to utilize Vermont as a battleground to teach the insurgents a lesson.

These industries, with the active consort and participation of the Vermont Retail Grocers Association, have engaged in a campaign of resistance, mis-information, coercion and distortion, not only in Vermont, but in all other parts of the country where similar legislation might be considered. To this end, they have succeeded in propagandizing their claims outside of Vermont, although their efforts in Vermont have not met with acceptance -- indeed defections from their ranks (largely due to their efforts, as well as the true success of the Law) are increasing of late.

Before discussing the proposal currently under your consideration, let me discuss some implications and experiences under the Vermont Law.

1. Impact and trend:

First, a small State such as Vermont, without actually mandating the use of refillable containers, cannot, of itself, influence a return to refillable containers by national producers. The economies of cost; which have induced local producers to utilize refillable containers, with significant economic benefit; cannot, by virtue of scale, act as a persuasion on national firms. Rather, the relative small scale of importance of the Vermont marketplace has resulted in a campaign of obfuscation and resistance far above Vermont's relative national importance.

However, despite these efforts, there has been, and there continues to be, overwhelming public support for the present law and for the mandating of the use of refillable containers.

2. Economic experience:

Much has been made, by detractors, of adverse economic impact of the Law upon Vermont.

However, before assumptions are to be drawn, more explanation is in order. It is true that during the initial phases of the implementation of the present Law, a loss in revenues from malt beverage taxes did occur. It is equally true that one of the reasons for its occurrence was "border-jumping" to neighboring States which did not have similar legislation -- particularly New Hampshire. However, other factors were of significant import, if not more meaningful:

1. Prior to the implementation of the Law, wholesalers and retailers stocked up with merchandise which was exempted from the Law by a regulatory "gentlemen's agreement". This action both inflated the previous year's receipts (F.Y. 1973) and deflated the receipts for first year under the Law (F.Y. 1974).

2. Vermont experienced a disastrous flood on June 30, 1973, the day before the effective date of the Act, which seriously curtailed the Summer tourist and recreation industry.
3. The energy crisis commenced in Vermont in October 1973 and extended through May 1974. Despite Federal Energy Office claims of parity, the withdrawal of two national oil firms from the Vermont marketplace cut available motor vehicle fuel. Prices of 75¢ a gallon or higher, and gas-less stations at mid-month were not uncommon.
4. A dearth of snowfall seriously impacted the Vermont ski industry, with receipts declining 25%-50% during the first four months of 1974. Two major ski areas in Vermont have subsequently entered bankruptcy.
5. Highway traffic counts were off 16%-22% monthly during the period July 1973 - November 1974.
6. There are other important marketing practices and differences between Vermont and its neighbors, not related to the Beverage Container Deposit Law, particularly with New Hampshire. It is of much more importance vis-a-vis New Hampshire than with other neighbors because of a larger market population proximate to that State than with others.

First, Vermont's Malt Beverage Tax amounts to 56.25¢ per case, compared with New Hampshire's 25¢ per case. This, of itself, presents a less favorable market pricing to Vermont merchants.

Secondly, New Hampshire wholesalers are permitted a post-off of price on merchandise in lots of 100 or more case purchases resulting in significant market advantage to New Hampshire merchants, as this practice is not permitted in Vermont.

Vermont's reticence here is to protect small grocers against larger competitors.

Thirdly, New Hampshire merchants can use malt beverages as a loss leader to lure consumers. Vermont merchants cannot sell at less than wholesale price.

Fourthly, Vermont has a retail Sales Tax, New Hampshire does not -- and experience since Vermont's enactment of its Sales Tax has indicated that "border-jumping" occurs for this reason.

It should therefore be clearly discernible that these factors have been major factors in "border-jumping", and it is impossible to differentiate the relative impact of each contributory influence.

Much has been made of by the Law's detractors that Vermont's Rooms and Meals Taxes increased 9% during a comparable period. While the Malt Beverage Tax is a fixed tax based on gallonage, the Rooms and Meals Tax is a floating tax based on price. As Rooms and Meals prices during July 1, 1973 - November 1, 1974 increased in the range of 25%-30%, a 9% increase in receipts represents an actual 16%-21% decrease in actual customer contacts -- a figure which, coincidentally or not, closely parallels the decline in highway traffic during the same period.

3. Highway litter:

Highway litter has been significantly reduced -- the beverage container portion having declined 76.1%, with a spin-off impact in reducing other forms of litter.

Detractors note that actual litter collection costs have declined only \$45,000.00. This is true. However, it is impossible to measure aesthetic benefits to the environment, particularly in a State whose economy is so highly geared to tourism and recreation as is Vermont's. Additionally, the intangible, but real, benefits to agriculture cannot be assigned an economic dollar value, although the agricultural community has truly benefitted.

4. Trend toward refillables:

Although the two largest domestic brewers have firmly resisted the return to refillable containers, some of the regional brands and Canadian producers have begun to make refillables available in the retail trade. All brands are available in refillable containers for in-house consumption in Bars and Clubs.

No less than eleven brands, foreign and domestic, are available in refillable bottles at the retail level. Conspicuously absent, generally, are Budweiser and Schlitz, the two largest producers -- although refillables of these brands have occasionally appeared.

Soft drink bottlers in Northern and Central Vermont have discontinued the use of non-returnable bottles and returned to refillables with encouraging results. Coca-Cola of Barre, Vermont, reports a return rate of 94% (16.67 uses) while Pepsi-Cola of Burlington, Vermont, reports a return rate of 98%.

5. Customer acceptance:

With a total return rate in excess of 90% (and higher in refillables, as previously indicated), customer acceptance is clearly indicated. A straw poll conducted by a Vermont State Senator indicates overwhelming public support.

6. Industry and consumer savings:

Coca-Cola of Barre, Vermont has reported a 54¢ a case operational savings, which permitted them to forestall price increases which sugar and syrup price increases would otherwise have necessitated.

Malt beverages are 35¢ a case cheaper in refillables. Doubtless, this differential would increase with a total refillable system. However, part of the cost of the use of non-refillables has no doubt absorbed some of the additional savings which would otherwise have accrued.

7. Employment:

Vermont has no container manufacturers, and any adversity in this activity has not occurred. Gains in employment have occurred in the bottling, wholesale and retail trades.

The industry has been reticent in supplying employment figures. However, by extrapolating results of economic studies in other States, employment may have increased in the neighborhood of 150+- persons. This figure is based on a container return rate of 80%, and is no doubt conservative.

8. Recent experience:

Commencing in November of 1974, highway traffic counts in Vermont, for the first time since the inception of the Beverage Container Law, equalled historic figures. This is significant as Malt Beverage Tax Revenues for December 1974 were 16% over the previous year. This fiscal year, Malt Beverage Revenues (free of previous economic deterrents previously cited) are up 9.5% over fiscal 1974 (July 1, 1973 to June 30, 1974) and are running ahead of fiscal 1973 (despite that year's figures being inflated by "stocking-up" actions of wholesalers and retailers).

The legislation pending before you would be of tremendous importance to the Nation in the conservation of its basic natural resources and of its energy resources, as well as contributing to the solution of the ever-growing problems of solid waste.

Detailed analyses of these factors have been completed by the States of Oregon, Maryland, Michigan, New York and Connecticut; the Province of Ontario, Canada; LaBatt Brewery of Montreal, P.Q., Canada; Migros Cooperatives of Switzerland; and the Academy of Science in Sweden. Each report corroborates the others -- and the significant conclusions are as follows:

1. Basic material savings of 70%+- will be realized over the present usage of non-refillable containers.
2. Energy usage will be cut in half; such saving is comparable to that realized in the adoption of the national speed limit of 55 Miles Per Hour. Measures such as this are absolutely necessary if there is to be any hope of realizing "PROJECT INDEPENDENCE" by 1985.

3. Highway litter from beverage containers will be reduced by two-thirds, or more.

4. Employment and payrolls will be increased.

5. Material cost savings will be realized by consumers -- and cash flow in retail trade will be increased.

The reasons, and imperativeness, for the adoption of the legislation pending before you are clearly apparent -- and I add my endorsement to your favorable and expeditious action.

The time for action is NOW, and if this Nation is to move forward in the resolution of its internal concerns, favorable action on this pending legislation will be one step that is truly a "giant leap for mankind".

DWW:fmt

APPENDIX C

Letter from Donald Webster, Director of Environmental
Conservation, to John Parry of the Maryland Public
Interest Research Group



APPENDIX C

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

Office of the Secretary

Department of Fish and Game
Department of Forests, Parks, and Recreation
Department of Water Resources
Environmental Board
Division of Environmental Engineering
Division of Environmental Protection
Natural Resources Conservation Council

December 10, 1976

Mr. John Parry
Staff Attorney
MaryPIRG
3110 Main Dining Hall
University of Maryland
College Park, MD 20742

Dear Mr. Parry:

I haven't had an opportunity, as yet, to fully review the report of the Department of Economic Development report "Social Costs of Beverage Containers", but I hope to get together with Leigh Seddon in the near future to do so.

I have done some analysis of sales and impact and must comment that the report treats that subject cavalierly and in a very sophomoric fashion. Obviously the authors have succumbed to unsubstantiated claims and opponents prejudices, plus a little distortion along the way.

The recent Vermont history as to beverage tax receipts is as follows:

Beverage Tax Receipts

FY	Total Dollars	Annual Change	%	Change From Base FY'72	%
72	3,054,649				
73	3,091,163 ^a	+ 36,514	+1.20%	+ 36,514	+ 1.20%
74	2,829,449 ^b	- 261,714	-8.47%	- 225,200	- 7.37%
75	2,964,586 ^c	+ 135,137	+4.78%	- 90,063	- 2.95%
76	3,133,779 ^c	+ 169,193	+5.71%	+ 79,130	+ 2.59%

a Inflated \$30,000-40,000 due to brewer's stockup in June 1973 (with 90 day clearance provision)

b Decreased \$30,000-40,000 due to brewer's stockup in June 1973. Adversely affected by New Hampshire's lowering of legal drinking age from 21 to 18, as of June 3, 1973.

c Doubtless there is still an adverse effect on sales due to New Hampshire's lowering of the legal drinking age, and lack of sales tax or business inventory tax.

Page No. 2
John Parry
December 10, 1976

The fiscal year 1972 figures are the last year's receipts that can be considered as totally unprejudiced by any identifiable factor. As you can see, there are specific identifiable factors, in addition to the general economic decline of June 1973 through November 1974, for each year since.

Logic dictates that there must have been some economic dislocation in the initial stages of the law, due to border crossing as a direct resistance to the deposit provisions. Logic also dictates that the impact of such actions would be most heavily felt in border areas, will have little if any effect on interior portions of the state.

Equally difficult has been the obtaining of substantiated results from individual merchants. We have received reports of losses of up to 75%, and gains of 65% in the same community. Neither case can be fully substantiated nor can the causes of such disparities be accurately assessed.

One of the larger soft drink firms estimated its sales losses, attributable to the law, as about 3% during the first eighteen months, with progressive growth in sales since.

A review of the beverage tax receipts since the effective date of the law, using unprejudiced antecedent results as a base, would lead me to surmise that the 3% figure is the only reasonable estimate that can be substantiated as attributable to the law during its early phases; further, any such result has been since modified by some abatement of "border crossing" and by apparent growth in sales.

It is interesting to note that beverage tax receipts for fiscal year 1976, despite the existence of the indicated factors tending to moderate sales, were at the all time high. Early return for fiscal year 1977 indicate an even more fortuitous growth.

Enclosed is a newspaper article which reflects on the problem of border sales with New Hampshire.

When Leigh and I get a chance to get together, we will comment more fully on the report.

Sincerely yours,



Donald W. Webster, Director
Division of Protection

Enclosure
cc - Leigh Seddon, VPIRG

DWW:mss

Lebanon's Growth Seen As Success Story

*Burlington Free Press - Dec 10, 1976
Rutland Herald*

Vermont Border Towns Lose Business

By MARGARET NELSON
Associated Press Writer

WEST LEBANON, N.H. — Although southern New Hampshire has been a focal point of economic development, the Granite State also is enjoying dramatic growth along the Connecticut River Valley.

Five years ago the area was considered economically depressed, and was known mostly for its bucolic countryside.

But today, miles of flat cornfields have given way to shopping centers, a disarray of electric signs, and traffic jams the likes of which local people used to read about only in out-of-town newspapers.

West Lebanon, once a rural, flood plain community on the Vermont border, has mushroomed into the Upper Valley's major retail center. The community's proximity to the Vermont border, its regional airport and the intersection of two interstate highways, have added to the growth.

In the past three years, major retail firms such as J.C. Penney, K-Mart, Purity Supreme and Grand Union have located in shopping centers just off Interstate 89 on New Hampshire 12-A.

The stores have joined with MacDonald's, Burger King, Pizza Hut, Kentucky Fried Chicken and other quick-service, fast-food franchises. The result is nearly 100 businesses wedged into a mile of strip development.

Despite the complaints of some environmentalists — who fear growth also will help destroy the beauty of the countryside — West Lebanon residents are pleased. Increased employment from new industries and the service businesses which have sprung up have turned around the area's once-static economy.

Spokesmen for several national firms that have built outlets in the area say freely they were drawn to the New Hampshire border because the state has no sales tax or business inventory taxes. They also see Vermont's stringent anti-bottle law as a magnet for beer and soft-drink buyers.

Local retailers, who feed on the drawing power of the national chains, agree. Earl Heath, known locally as the "Booze King," says he sells a million dollars worth of beer annually from his 20-foot-wide store in one of the two major West Lebanon shopping centers.

Heath estimates eight of 10 cars in the shopping center parking lot are from Vermont.

Across the border, in White River Junction, Vt., businessmen are openly envious. They concede that New Hampshire's low taxes and welcome mat are drawing away customers.

A major bus terminal at the intersection of Interstates 89 and 91, has served as a magnet for some retail trade, but generally, they say, business could be much better.

In an effort to regain some customers, businessmen on the Vermont side of the Vermont have asked the legislature in Montpelier to establish a tax-free zone so they may compete with New Hampshire retailers.

Wayne Charadini, president of

the Twin State Fruit Co., says Vermont's 3 per cent sales tax doesn't make much difference on small items, but his beverage sales have dropped sharply since 1973.

"They didn't build those shopping centers so close to the border for nothing," he laments.

Some New Hampshire farmers still talk fondly of cornfields and pastures that dotted the river plain, but most residents see the growth as a success story. They brush aside most of the problems that have accompanied the unplanned growth.

The total property valuation in Lebanon, a city of 11,000 of which West Lebanon is a part for taxing purposes, has climbed from \$95 million to \$102 million in five years. City Manager Alan Perkins says the price of land has gone up and the city has experienced a dramatic rise in construction, particularly multi-family apartment units.

Thermal Dynamics Corp., recently doubled its plant capacity in Lebanon and already has plans on the boards to double the plant size again.

The Sheraton Hotel Corp. says a new 150-room motor inn is planned for construction in 1977 near the Lebanon Regional Airport.

The airport itself, according to its manager, is "bursting at the seams." A new terminal building and two more runways are planned.

The fast growth has not come without pain, says Perkins. The city recently built a \$7-million sewage treatment plant which it hopes will keep pace with increased use.

Property taxes in the city went up a whopping 16 per cent this year instead of down as some residents expected.

Perkins says the city will have to expand its police and fire departments and more pressure is expected on the local school system as the new apartment complexes fill up.

Traffic along 12-A, the center of the development, has been one of

Perkins' biggest headaches. He says the two-lane road is jammed for most of the day and is nearly impassable at 5 p.m. when Thermal Dynamics employees head home.

Because the road is so congested, the state intends to reclassify it as an urban highway and turn over its maintenance to the city. Perkins wants the state to improve the traffic flow before the city takes over.

The city some time ago asked the

state to put in a traffic light to ease congestion near the West Lebanon Shopping Center. Now city officials say a single traffic light will not be enough and that additional service roads are needed to really solve the problem.

Stan Judkins, of the Environmental Consulting Group, says proper urban planning would have avoided many of the area's present problems.

APPENDIX D

Letter from Leigh Seddon, Assistant Director of
the Vermont Public Interest Research Group to John Parry
of the Maryland Public Interest Research Group
and Attachments

December 17, 1976

John Parry
MaryPIRG
3110 Main Dining Hall, Univ. of Maryland
College Park, Maryland 20742

Dear John,

I would like to apologize for taking so long to reply to your letter of November 22. I will try to critique Appendix A of the report you sent me. The report states the bottle bill in Vermont has:

A. Created additional handling and storage costs. Yes it has. But the real question is how much. A study done in Oregon indicates this category of cost is about 0.5¢ per container. The Federal Reserve Bank study confirms this figure. In Vermont Don Webster estimates that the costs range from 0.4¢ to 0.75¢ per container for redemption centers. As will be mentioned below, this small cost is more than offset by savings due to refilling and recycling.

B. Caused, at least temporarily, price increases. Yes it did, but the law itself only accounted for part of that increase. Initial price increases after the passage of the bottle bill were approximately 60¢ per case of beer. Distributors broke down this increase into 24¢ due to the provisions of the law, 30¢ due to rises in the cost of grain, labor, transportation, and energy, and 6¢ "to round things out". Thus over 50% of the price increases were due to external factors not connected to the bottle bill. VPIRG in fact pushed for an investigation of the price increases by the Federal Trade Commission. Even Gov. Thomas Salmon said, "It is clear to me...that the distributors have decided to price their product so high as to create public anger and an outcry for repeal of the law".

New data now indicates that the cost of handling and storing containers is more than offset by savings due to refilling and recycling. Now a full 90% of containers in Vermont are either refilled or recycled. Both soft drink and beer prices reflect the savings to consumers due to Vermont's bottle law. For example, soft drink bottlers in Vermont were able to hold their prices the same during the large sugar price increases and now soft drink prices are as low as they were before the bottle law. I doubt any other bottlers in other states can make this claim. As for beer prices, a recent survey of beer prices in Vermont, New Hampshire, and Massachusetts indicated that Vermonters are saving money by having refillables available. In fact, before the bottle law Vermont beer prices were averaging 25¢ per 6-pack higher than New Hampshire's, now Vermont's are only 6¢ per 6-pack higher.

C. Caused a reduction of sales of about 10%. This is simply not true.

The bottle law did account for a small portion of the reduced sales, especially in border towns, but clearly not the full 10%. An accurate analysis of the causes of reduced sales must take into account other important factors such as (1) in June 1973 New Hampshire lowered its drinking age, thus greatly exacerbating the boarder problem, (2) Vermont experienced summer floods and an extremely poor winter of little snow for skiers and no gasoline to get them to Vermont. Comparable revenues from sales of cigarettes, hard liquor, and gasoline all show a decline similar to the malt beverage sales drop. More importantly, new sales data (enclosed) show that Vermont's beer sales have far outpaced both New Hampshire and New Yorks in recent years. This indicates that Vermont bottle law is not hurting sales of malt beverages and might in fact be helping them (perhaps through reduced prices).

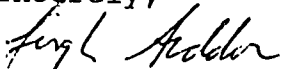
D. Caused some solid waste problems. The report states that disposal of one-way containers became concentrated in just a few areas. This was only true just for a very short period of time after the bottle law went into effect. As the beverage companies realized the law was not going to be repealed, they quickly shifted over to refillables and recycling of their containers. This is now true for 90% of the containers in Vermont. Thus the problem was only temporary, and mainly due to the fact that the beverage companies were stalling and didn't take advantage of the 15 month changeover period from when the law was enacted til when it took effect (April 1972 to July 1973). The report is also wrong when it states that bottlers have not been granted an adequate time to build up an adequate "float". They have had nearly 5 years! The report cites pilferage as another problem. This again was simply a start up problem, and due to the industry's stalling on recycling and refilling and improper disposal of bottles they did take to landfills. The report also cites problems with the recycling of glass. The fact is that photo-optic separation is not necessary, since the bottles come sorted to the recycler in the first place. It is the recycler's fault that the glass is subsequently mixed.

E. Caused a reduction in the brands available. This is not true. There are many additional brands available today that were not sold before the enactment of the bottle law. This includes 15 new foreign brands that have been introduced into the Vermont market.

A final point. The report asks "does a bottle bill aid or hinder the solving of the total solid waste problem. Clearly it does and it does it in the most effective manner, source reduction. Studies have shown that source reduction is the economical and environmentally sound method of dealing with our solid waste problems. (See Garbage Guide #5 1975, Environmental Action Foundation).

I hope this answers some of your questions, and I apologize once again for the delay.

Sincerely,



Leigh Seddon, Assistant Director

VERMONT BEER SALES OUTSIDE NEW HAMPSHIRE AND
NEW YORK NEIGHBORS

COULD NEW HAMPSHIRE RESIDENTS BE GOING TO
VERMONT TO BUY LOWER PRICED BEVERAGES ? ?

FISCAL YEAR	<u>GROWTH RATES - (PERCENTAGE)</u>			
	N.Y. ²	VT. ³	N.H. ³	USA ⁴
	%	%	%	%
75/76 Vs. 74/75	(1.4) ¹	4.7	(0.7)	---
74/75 Vs. 73/74	0.8	5.0	2.7	1.4

VERMONT'S BEVERAGE CONTAINER DEPOSIT LAW (BOTTLE BILL)
WENT INTO EFFECT 9/1973

NOTES: 1) () INDICATES A SALES DROP :

2) Fiscal year April - March

3) Fiscal year July - June

4) Fiscal year Jan. - Dec.

(Source BEVERAGE INDUSTRY
May 21, 1976)

5) Data on Vt. , N.H. & N.Y. From
State liquor commissions or
Department of Taxation.

SEE BACK OF PAGE FOR DATA ON
ACTUAL GALLONS OF BEER SALES
OR TAX REVENUE FOR EACH STATE
OVER FISCAL YEARS SHOWN ABOVE.

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BEER SALES DATA (GALLONS OF BEER TAX REVENUE)

YEAR(FISCAL)	N.Y. (Millions of Gallons)	N.H. (Millions of Gallons)	Vt. ¹ (\$ Million)	USA (GALLONS/CAPIT ---
75/76	353.74	26.50	2.35	---
74/75	363.83	26.69	2.72	21.6
73/74	360.95	25.95	2.59	21.3

NOTE: Vt. BEER SALES TAX RATE HAS NOT CHANGED DURING PERIOD. THUS BEER TAX REVENUE IS DIRECTLY PROPORTIONAL TO GALLONS OF BEER SALES IN STATE.

SOURCES:

- 1) NEW YORK -- JAMES TULLY, JR. COMMISSIONER OF TAXATION AND FINANCE. STATE OF N.Y. DEPT. OF TAXATION AND FINANCE ALBANY, N.Y. 12227
- 2) NEW HAMPSHIRE COSTAS TENTAS, CHAIRMAN, STATE LIQUOR COMMISSION, STORRS ST. CONCORD, N.H. 03301
- 3) VERMONT --- JAMES KENDALL, VERMONT DEPARTMENT OF TAXATION, MONTPELIER, VERMONT 05602
- 4) USA ---- BEVERAGE INDUSTRY, MAY 21, 1976
JOHN C. MAXWELL, JR., MAXWELL ASSOCIA
-ES

FOREST GOLDEN, P.E.
36 S. MARVINE AVE.
AUBURN, N.Y. 13021

10. OCTOBER 1976

VERMONT

71, 72, 73, 74

Compare Growth RATES
N.H. 7
N.H.

0.00 T

MAIT
FYE 6/30/71

245,841.69 +
280,961.81 +
242,402.18 +
204,940.58 +
205,916.40 +
178,602.79 +
205,700.15 +
205,700.15 +
205,700.15 -
146,550.94 +
178,762.73 +
201,157.17 +
197,347.40 +
219,138.90 +

VINDOUS
FYE 6/30/71 0.00 C*

10,171.83 +
14,351.72 +
14,192.85 +
14,228.15 +
12,560.22 +
15,457.01 +
22,399.80 +
15,036.21 +
16,327.98 +
18,437.54 +
13,258.41 +
24,190.57 +

2,510,322.74 T

VERMONT

State Tax Revenue

76 \$ 2,851,954.
75 2,722,899.
74 2,592,618.
73 2,859,806.
72 2,849,770.
71 2,510,322.

VT.

4.7%
5.0%

Industry

190,612.34 T
1.4 %
3.6 %

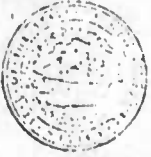
2.17%
N.H.
-0.71

2.84
3.4%

FOREST GOLDEN
PROFESSIONAL ENGINEER

36 S. PARKING AVE.
AUBURN, NEW YORK 13021
PHONE 252-7753

6/30/70 - 6/30/71



State of New Hampshire

STATE LIQUOR COMMISSION

STORRS STREET

CONCORD, N.H. 03301

COSTAS S. TENTAS
CHAIRMAN

JAMES P. NADEAU
COMMISSIONER

JOHN J. RATOFF
COMMISSIONER

September 24, 1976

Mr. Forest Golden
36 S. Marvine Avenue
Auburn, New York 13021

Dear Mr. Golden:

Your letter of September 18, 1976 to Governor Meldrim Thomson Jr. has been referred to this agency for a reply.

The beer tax revenues and gallonage for the requested are as follows:

	<u>Revenue</u>	<u>Gallons</u>
1972	\$2,903,477	24,195,642
1973	3,012,950	25,107,917
1974	3,114,184	25,951,533
1975	3,202,834	26,690,283
1976	3,898,050	26,501,065

Our fiscal year is July 1 to June 30.

We trust that this is the information desired.

Yours very truly,

STATE LIQUOR COMMISSION

Costas S. Tentas
Chairman

CST:BC

Cc: Governor Meldrin Thomson Jr.



STATE OF NEW YORK
DEPARTMENT OF TAXATION AND FINANCE

BENJAMIN L. SCHULMAN
DIRECTOR

MISCELLANEOUS TAX BUREAU
STATE CAMPUS
ALBANY, N.Y. 12227

STATE TAX COMMISSION
James H. Tully, Jr.
PRESIDENT
A. BRUCE MANLEY
MILTON KOERNER

ADDRESS YOUR REPLY TO

August 15, 1975

TELEPHONE: (516) 457-4277

Mr. Forest Golden
Professional Engineer
The Cayuga County
Environmental Management Council
36 S. Marvine Avenue
Auburn, New York 13021

Dear Mr. Golden:

Your letter, dated July 31, 1975, addressed to Governor Hugh Carey, was forwarded to the State Liquor Authority and finally to this Bureau for reply. One of the many taxes we collect is the beer tax.

New York State's fiscal year goes from April 1, through March 31. Accordingly, our sales and tax statistics are kept on such basis. The beer sales for the last six years were as follows:

<u>Fiscal Year</u>	<u>Gallons</u>
4/1/69 - 3/31/70	346,232,920
4/1/70 - 3/31/71	360,031,830
4/1/71 - 3/31/72	358,291,620
4/1/72 - 3/31/73	350,460,833
4/1/73 - 3/31/74	360,948,317
4/1/74 - 3/31/75	363,831,649

We are pleased that we could be of service to you.

Very truly yours,

Alan Burke
Alan Burke
Assistant Director

Table 1
Comparative Retail Beer Prices in Massachusetts and Vermont

		Massachusetts Price	N.H. Price	Vermont Price
Budweiser	- cans	\$1.80	\$1.71	\$1.77
Schlitz	- cans	\$1.80	\$1.71	\$1.71
	- nonrefillable bottles	\$1.80	\$1.56	\$1.78
Pabst	- cans	\$1.71	\$1.60	\$1.58
	- nonrefillable bottles	\$1.67	\$1.49	\$1.56
Black Label	- refillable bottles	--		\$1.28
	- nonrefillable bottles	\$1.65	\$1.38	--
Rheingold	- cans	\$1.68		--
	- refillable bottles	--	\$1.36	\$1.32
Narragansetts	- cans	\$1.67		--
	- refillable bottles	--	\$1.47	\$1.33
Miller Lite	- cans	\$1.79	\$1.72	\$1.75
	- nonrefillable bottles	\$1.85	\$1.60	\$1.77
Miller	- cans	\$1.79	\$1.73	\$1.76
	- nonrefillable bottles	\$1.77	\$1.63	\$1.76
Old Milwaukee	- cans	\$1.66	\$1.41	\$1.49
	- nonrefillable bottles	--	\$1.35	\$1.22
	- refillable bottles	--		\$1.31

Notes:

1. All prices for 6 pack of 12 ounce containers.
2. Vermont prices adjusted for difference in excise tax in two States.
3. All prices from survey conducted by EPA in September 1976.
4. Prices are averaged over retail outlets surveyed.
5. All containers in Vermont carry a \$.05 deposit. Price excludes deposit.

VERMONT'S BOTTLE LAW

Vermont Public Interest Research Group

The 'bottle law' will once again be a heavily lobbied environmental issue in the 1975 General Assembly. Last year, amendments to improve the law and help the small grocer passed the House but failed in the Senate. Anti-bottle law lobbyists created just enough questions about litter and beer sales to prevent passage of strong positive improvements to the law.

What were the improvements?

The so-called Lloyd amendments would have banned flip-top cans and encouraged the use of a standard refillable bottle through a 'preferential' or lower deposit. Many grocers agree that the law is here to stay and that a standard refillable bottle would help their storage and handling problems.

Who are the anti-bottle law lobbyists?

A large number of lobbyists are in Montpelier every year representing the United States Brewers Association, the Glass Container Manufacturers, the American Can Company, the Vermont beer distributors, the Retail Grocers Association, and many individual companies.

Since public support makes repeal of the bottle law unlikely, the acknowledged tactic is to keep it as controversial and confusing as possible. This discredits the concept in other states considering bottle legislation and builds up the frustration that the lobbyists hope will lead to repeal in the future.

The campaign of 'organized confusion' is waged with endless statistics about the alleged economic effects of the law, disparagement of the social and environmental benefits, and bewildering theories of 'total solid waste management'. This last phrase is a code word for getting rid of the bottle law.

The code word surfaced last year when one lobbyist offered a legislator a \$100,000 'corporate study' of solid waste management if the legislator would drop his amendments aimed at improving the law.

What about litter?

The bottle law has accomplished what it set out to do -clean up state roads. In order to monitor the effectiveness of the law the Vermont Highway Department conducted a special litter study along 177.8 miles of test highway.

In the spring clean-up of 1973 (conducted in June before the law went into effect), the Highway Department picked up 19,451 bottles and cans. In the spring clean-up of June, 1974, however, the total fell to 6,955 - a reduction of more than 65%.

The next month's pickup (July) saw a reduction of more than 80%. Total bottles and cans picked up numbered 1580, down from 8,525 the year before. And the state's litter collection costs dropped as well - from \$250,000 in fiscal '73 to \$205,000 in fiscal '74.

Litter caveat: This year's highway litter report may show a slight increase in barrels of roadside litter collected. This may reflect the return to a normal summer tourist season (and normal litter) in comparison with the summer of 1973 when floods dampened the tourist trade considerably.

What about beer sales?

Anti-bottle lobbyists argue that there has been a tremendous drop in beer sales and that the bottle law is to blame. This is misleading. All through fiscal year '74 Vermont suffered from a series of misfortunes - a summer flood, a shortage of gasoline, lack of snow, and severe inflation. As a result the tourist season was a disaster that hurt the entire economy of the state. Anticipated revenues were down in most areas and revenues from the malt beverage excise tax were no exception. But the revenue was only down \$288, 192 from the year before, a not unreasonable drop considering what had happened.

Here are the tax revenues collected for the year before the law went into effect and for the first year of its operation. Tax receipts (25¢ per gallon) represent the sales of the previous month. Note that sales appear to be returning to normal according to August and September figures.

Pre-Bottle Law:

October 1972	\$222,290
November 1972	224,164
December 1972	227,832
January 1973	211,518
February 1973	187,297
March 1973	218,354
April 1973	206,775
May 1973	241,954
June 1973	255,758
July 1973	294,457
August 1973	287,955
September 1973	257,066
	<u>\$2,835,420</u>

First 12 Months of Bottle Law:

October 1973	\$206,485
November 1973	207,841
December 1973	188,716
January 1974	185,330
February 1974	160,167
March 1974	190,431
April 1974	182,518
May 1974	198,715
June 1974	232,998
July 1974	241,527
August 1974	283,029
September 1974	269,671
	<u>\$2,547,428</u>

What about the border store?

The problem of competitive disadvantage with other states is not insoluble. The excise tax could be lowered - Vermont's excise tax equals that of Mass., N.Y. and N.H. combined. At the very least the purchase price could be separated from the deposit (which is returned). In fact, the purchase price could be lowered if beer were sold in refillable bottles. But the two giants, Bud and Schlitz, have shown no interest during the first 14 months of the law to move to refillables. Their price is high, their sales have plummeted, and Vermont grocers have suffered. In contrast, Black Label sells beer in 12oz. refillables at considerable savings to the consumer and their sales are up. If Schlitz and Budweiser followed that example, beer along the border would be more competitively priced.

What could be done?

1. Pass amendments that encourage the use of refillables.
2. Reduce malt beverage excise tax.
3. Raise revenue for pilot recycling projects near population centers by adding a litter tax on top of deposit for throwaways. However, a litter tax should not be substituted for the deposit.
4. Require that throwaways with a deposit be identified and distinguished from refillables with a deposit - confusion in the marketplace exists over what is or isn't a refillable bottle.

APPENDIX E

Mr. Parry's Questions to Dr. Tawil and Dr. Tawil's Response

1. According to the May, 1976, issue of Reader's Digest, beer distributors in Vermont deliberately attempted to manipulate the price mechanism so that the bottle bill would be repealed. In fact, the Governor charged that beer distributors were grabbing for profits in an "overt attempt to anger the Vermont public by substantial increases in price".
 - a. Was this price factor taken into account in your study?
 - b. If so, in what way?
 - c. If not, how would this affect your study?
2. According to Dr. Carlos Stern, who at the time was a Professor of Agricultural Economics at the University of Connecticut and was also the principal investigator for the Committee to Study Beverage Container Legislation in Connecticut, and according to a story in the publication Environmental Action, July 19, 1975, the brewers in the Vermont regional area deliberately attempted to distort the Vermont experience. Dr. Stern went to the Budweiser outlet in New Hampshire, which is supposed to serve Vermont, and found that they were refusing to take empties from Vermont. Furthermore, Environmental Action reported that the major beer companies, particularly Budweiser and Schlitz (the two major Vermont suppliers), refused to supply premium beer in 12 ounce six-packs of refillables. Thus, consumers and grocers were both burdened unnecessarily. (Consumers had to pay handling costs and deposits on throwaway bottles and cans and were denied the savings of refillable bottles. Millions of throwaways were redeemed at the stores only to be trucked to the dump. Grocers had to handle and sort more than 75 varieties of brands and sizes of beer alone - all of which ended up in the dump.)
 - a. Were these factors taken into account in your study?
 - b. If so, in what way?
 - c. If not, how might these events affect your report?
3. According to one of the sources you used in your report, Michael Loube's The Vermont Experience, published by the EPA, New Hampshire, reduced its drinking age to 18 around the time the bottle bill was implemented. The result of this change was that kids who used to buy their beer in Vermont bought beer in their own state instead.
 - a. Was this factor taken into account in your study?
 - b. If so, in what way?
 - c. If not, how would this affect your study?
How would it affect border crossings?

4. Vermont has a very high beer tax, in fact, the tax is higher than its border states, Massachusetts, New Hampshire, and Maine combined. In addition, according to David May who wrote a publication called the New York State Bottle Bill, the brewers association encouraged New Hampshire stores to sell beer below costs as a loss leader.
 - a. Were either of these factors taken into account by your study?
 - b. If so, in what way?
 - c. If not, how might these factors affect your analysis?
5. According to the Department of Tourism of the State of Vermont, during the fall of 1973 and during 1974 the state suffered a disastrous ski season, during the summer there was a flood, and there was also a shortage of gasoline and oil which helped to trigger severe inflation.
 - a. Were any of these factors taken into consideration in your study?
 - b. If so, in what way?
 - c. If not, how would they affect your analysis?
6. On page II-7, you assume that "Consumers act from full information, and they choose those alternatives which yield them the greatest benefit". In addition, no where in your report do you discuss the affects of advertising and lobbying on consumer attitudes.
 - a. Can I then conclude that you do not believe that advertising or lobbying can distort consumer attitudes to such a degree that they, the consumers, are not acting with either full or accurate information?
 - b. If so, would it be fair to say that assuming it can be shown that advertising and lobbying do affect consumer attitudes in the way I have described, your study is based on an incorrect assumption and therefore unsound?
 - c. If not, what do you believe and how was that belief incorporated in your study?
 - d. Finally, suppose for the moment we discount advertising and lobbying; what makes you think that the consumers act from full information, and choose those alternatives which yield them the greatest benefit? And before you answer, let me identify several instances where consumers have not behaved as you have assumed.
 1. Buying the Vega in record numbers even though by almost all accounts the car is a lemon.
 2. Generic drugs - people are willing to pay much higher prices for brand name drugs even when the exact same drug is sold for less money without the big company label.
7. As I observe our society historically, it has almost always been true that Americans and for that matter most peoples are resistant to change. However, once the change has taken place and people really understand that a change is beneficial, the initial resistance

is overcome. For example, in Oregon we observed reluctance at first to accept bottle legislation. However, after a year or two passed, the whole state eagerly endorsed the legislation. Given this phenomenon and the fact the phenomenon is supported so convincingly by common sense, why did you use price and sales data for the year immediately following the imposition of bottle legislation in Vermont? Aren't those statistics distorted?

Also, have you looked at the data in 1975 and 1976?

a. If so, what does it tell you?

b. If not, why haven't you bothered?

8. On page III-17 you state, "It should be emphasized that our use of the Vermont values of p3 will make the mandatory deposit measures appear less costly than they would, in fact, be." Given all the questions I have raised, do you have any doubts as to the validity of that statement?

Dr. Tawil's Response to Mr. Parry's Questions:

1. The following quotation is taken from Nadworny, p. 16. "A survey which was conducted last year which included usable data from about seventy retail stores in the State, indicated that the average retail price of a six-pack of beer of \$1.45 during the three months prior to the imposition of the deposit requirements, and an average price of \$1.94 in September, 1973, the first month under the law. If the deposit is included in the calculations, the average price increased almost 34 percent; excluding the deposit, the average price increased by about 13 percent--by 19 cents, or a little over 3 cents per container. It appears that just prior to the imposition of the deposit requirements, the wholesale prices of the leading brands of beer (which brands account for some three quarters of the beer sales volume in Vermont) were increased around 11 percent to 12 percent. Since that time, the prices of beers have changed and are now generally higher than they were a year ago." A 13 percent rise in the retail price of beer in Vermont, compared with an 11 percent-12 percent rise in the wholesale price to distributors does not leave much to support the charge that Vermont distributors rigged prices to protest the deposit bill. I also note that the Consumer Price Index for at-home consumption of beer rose 8.2 percent nationally between June 1973 and June 1974. Had Vermont distributors the desire and capability of jacking up beer prices to protest the bill, I would think that a much higher price rise would have been observed.
2. There are economic explanations for the phenomenon that you describe here. To quote our report (p. IX-5), "The number of brands available to consumers could be expected to decline, since some bottlers, particularly those serving regional markets, might find it unprofitable to adjust their production process to accommodate the special container and labelling requirements necessary for refillables. The reduction in the number of brands available to beverage consumers in Vermont and Oregon has been documented. However, the beverage markets in these states are considerably smaller than the Maryland market, suggesting that bottlers would have a greater incentive to accommodate their production process to preserve their Maryland sales." The results of our study would be affected only if the container mix assumed for Alternative III would be different. (Cf. Table III-2, p. III-11) If all beverages are sold in refillable bottles, the results of Alternative I apply.
3. The drinking age was lowered in New Hampshire from 21 years to 18 years on June 3, 1973. The periods compared for beer in the study were September 1972-August 1973 and September 1973-August 1974. That is, the revised New Hampshire drinking law was in effect during the last three months of the first one-year period. Since it was not in effect during this entire period, only a portion of the effect is accounted for in our statistical estimate for beer. Omission of the entire effect would cause our estimate of p_3 for beer (but not for soft drinks) to be high. While the extent of the overestimation

cannot be determined, the following data are offered with respect to beer sales along the N.Y.-Vermont border. The information is reported in Some Economic Consequences of the Vermont Beverage Container Deposit Law by Milton J. Nadworny, Professor of Economics at the University of Vermont. Several pages of this study are reproduced and attached. The data are for three areas in New York State which border on Vermont. (Cf. Nadworny, pp. 10-16) Some of the towns in each group are identified on the attached map. The Group I communities lie in the Northeastern part of New York, the Group III communities in New York along the Southwestern border of Vermont, and the Group II communities inbetween those of Groups I and III. The volume of beer sales in calendar 1973 is compared with the volume in the first 10 months of 1974. Recall that the Vermont law became effective on September 1, 1973, so that part of its effect is included in the calendar 1973 period, thus underestimating the bordertown effect. In Vermont as a whole, beer sales were only 78 percent in the second period what they were in the first period; but in the Group I communities, they were 91 percent; in the Group III communities they were 159 percent; in the Group I, II, and III communities combined, they were 120.5 percent. The comparable figure for New York State as a whole is 102.2 percent. Thus, there is little question that consumption patterns along the New York-Vermont border were affected by the Vermont bottle law. Another survey relating to the New Hampshire-Vermont border is also discussed in the attached pages. Nadworny observes that "New Hampshire and New York (at least the northern half of the latter state) also experienced a similar winter, a gasoline crisis, inflation, and worsening general economic conditions. It would therefore be reasonable to expect that beer sales in those areas would have followed a pattern similar to Vermont, at least so far as the general trends in sales would be concerned."

4. As long as the tax rates on beer were not changed in any of the border states between September 1972 and August 1974, our beer estimates are o.k. Any price differential that is preserved over this period would introduce no bias into our results. The claim that "the brewers association encouraged New Hampshire stores to sell beer below costs as a loss leader," may be true, but apparently the New Hampshire stores did not accept the advice of the association. Nadworny claims that during the relevant period, beer prices in New Hampshire did not decline (Nadworny, p. 12). Admittedly, this does not imply that beer was not being sold at a loss, but while it is clear that brewers would benefit from retailers selling beer at a loss, it is far from clear that the retailers would benefit.
5. The factors mentioned here were not taken into account in the statistical estimation of p_3 , which could mean that the values of p_3 are too high. However, the comparisons made by Nadworny with New York and New Hampshire, where conditions were approximately the same as in Vermont, are relevant.

As stated in our report, and I have repeatedly emphasized in my testimony before the Task Force, we do not claim our statistical

estimates of the consumer convenience factor to be precise. Rather, we have suggested that market phenomena observable in Maryland indicate rather strongly that Maryland consumers place a higher value on convenience than the value used in our study. It would seem to me that those who wish to minimize the value of consumer convenience must concentrate their efforts in explaining (away) consumer preferences for beverages in the higher priced containers. (See reply to question 8 below.) These are readily and directly observable phenomena and, in my opinion, are difficult to deny.

6. a. There is nothing in the report to suggest our disbelief that advertising and lobbying affect consumer attitudes. However, in general I would not accept your word "distort" to describe attitudinal changes which might result from advertising or lobbying. As I testified at the last Task Force meeting, I see the purpose of advertising as an attempt on the part of sellers to persuade the consuming public to try their product. If the sellers are successful in this and consumers, after trying the product, continue to purchase it, then I think that it is fair to conclude that these consumers prefer the product to other products which they might have purchased with their money. In this respect, it does not matter whether the advertising is informative, or in the extreme, just plain silly. The point is that the consumer demonstrates his preference for the product in question by his repeated purchases of it. On the other hand, if the advertising is untruthful or misleading, the consumer may act on the basis of imperfect information. In this case, the consumer, after sampling the product, may find it disappointing and, as a result, may not repurchase the product. Finally, I think it fair to conclude that any seller who is not able to persuade a significant number of his customers to continue purchasing his product will incur financial losses. Thus, only "good" products will survive in the market place.
- b. An incorrect assumption does not (necessarily) produce an unsound conclusion. An unsound conclusion may result if it depends critically on that portion of the assumption which is invalid. To give an example, it has been claimed recently that if temperatures in the Northeast this winter are not below normal, there will be no severe energy shortages. Now, if temperatures are slightly below normal, this does not imply severe energy shortages. To the extent that your criticism applies to the conclusion of our study, it would be necessary for you to demonstrate that:
 1. Significant numbers of consumers have incorrect information about beverages and beverage containers.
 2. Because of this misinformation there consumption pattern of beverages is significantly affected.
- c. See part 6 a. above. Furthermore, my own exposure to beverage advertising does not lead me to believe that I have been in any way misinformed. I would be very interested in discovering upon what basis such a charge could be levied.

- d. I do not believe that all people always act from full information. Making this assumption permits me to deduce certain conclusions. Again, the conclusions are not necessarily invalidated because the assumption holds only imperfectly. (Cf. 6b. above) I think that there are better examples of the effect of imperfect information than the ones you give. Report on the Vega is reproduced from the 1975 Buying Guide of Consumer Reports and is attached. Among the subcompacts, this car is rated equal in overall quality with the Datsun B210, Datsun 710, Fiat 124 TC, Ford Pinto, Honda Civic, Mazda RX3, Subaru, Toyota Corolla, and the VW Superbeetle. It apparently does not qualify as a lemon. Although the repair records of the 1971 and 1972 Vegas are judged "much worse than average", the "worse than average" record of the 1973 Vega is apparently attributable to the manual transmission. The same car with an automatic transmission (which most buyers choose) seems to have a better repair record than most other cars surveyed. With regard to your example of generic drugs, let me pose the question: To what extent can we claim that this situation results because in most states (at least until very recently) it has been illegal for pharmacists to advertise drugs and drug prices? I believe that the imperfect information of consumers in this case is largely due to government interference in the market.
7. There are two points that I would like to make here with regard to the first part of your question. The first is that the citizens of Vermont may not be aware of the full implications of their bottle law. To suggest why this may be so, consider the result in our report that if a mandatory deposit law were passed in Maryland, prices of goods sold in retail grocery establishments could increase such that Marylanders would have to spend nearly \$30 million more than they now do for the same items. If consumers are unaware of this added cost attributable to a mandatory deposit law, it is quite conceivable that they might find the law to be worthwhile. Certainly, food price increases of this magnitude could easily be mistaken for increases due to inflation, rather than to the bottle law. The second point I wish to make is this: A person may prefer to kill a fly with a cannon rather than let it live, if the fly is sufficiently annoying. However, the same person would find a fly swatter to be a much more efficient instrument of destruction in this case. Similarly, the populace may desire to reduce litter, even if it must incur the substantial costs of a mandatory deposit law to do so. Our study does not say that the litter benefits from a mandatory deposit law are less than the costs of a deposit law. What it does say is that the least costly way--by far-- of dealing with the litter problem is by imposing a small tax earmarked for more frequent litter collection. That is, kill the fly with a fly swatter rather than a cannon!

With regard to the last questions in this part, we have attempted to obtain price/quantity data on beer and soft drink sales in Vermont for 1975. So far we have only been successful in obtaining quantity data for beer, since excise tax records are kept on beer sales. If we are eventually successful in obtaining the other data required, we will surely make the results known to the Task Force.

8. None. The questions which you have raised pertain to our estimate of p3 for Vermont. The statement quoted refers to observed market phenomena in the Maryland market. It is the Maryland market phenomena which cause us to believe that the statistical estimates based on the Vermont experience are too low. Maryland market phenomena are discussed in our report on pages III-13, 14; IX-3-5; and in the testimony I gave at the last meeting. Additional market evidence was provided by Mr. Jay Davis, President of the Maryland Soft Drink Association. Washington 7-Up, which services the market in the District and in surrounding counties, has accounts with 550 food chain stores. Both returnables and non-returnables are sold in 520 or 95 percent of these. Excluding the deposit, a beverage in a 16-oz. refillable container is about 4.1 cents cheaper than the same beverage in a 16-oz. one-way container. If the beverage is 7-Up, only 12.5 percent of total 16-oz. sales are in refillable containers. The comparable figure for Dr. Pepper is 24 percent. These facts strongly support the contention that, "on average", consumers in an area which is largely urbanized, such as Maryland, consumers impute a value to convenience in excess of 3.6 cents per container for soft drinks.

BEER# SALES, PRICES, TAX REVENUES

Information about shipments of beer in Vermont is collected by governmental and private groups. There is no cumulative information which is regularly collected, compiled, and made available concerning sales of beer at the retail level. Recorded information used in this report was supplied by the State Department of Taxes and the Vermont Wholesale Beverage Association. This information, in turn, is based upon shipments of beer into the State or upon shipments made by distributors. (Beer is taxed by the gallon, at the wholesale level, so tax revenues collected represent the volume of beer which is distributed.) Tax Department and Beverage Association data are both compiled monthly, and generally approximate each other over extended periods of time; there is no problem in terms of trends or directions of these two compilations of information. Trends in beer shipments, beer revenues, and retail sales can generally be substituted for each other. (That is not to say that the incomes obtained from beer sales by distributors and retailers necessarily moved in the same direction and rate as did sales, since there were price changes and cost changes generated by the Law. Estimates of these elements will be presented subsequently.)

*Technically, the term is "malt beverage," but since "beer" represents the vast majority of malt beverages, and is a more convenient term, that label will be used.

There is one precise indicator which consistently reflects beer shipments in Vermont, and that is beer tax revenue. This tax is 25¢ per gallon, and has remained at that level for some years; therefore, changes in these revenues over time provide excellent measures of year-to-year trends. (There are numbers of variations in revenue report data provided by different State agencies, but the author has used only one prime source in this analysis.) Because the fiscal year used by the State begins July 1, and the Deposit Law took effect in September, 1973, annualized comparisons have been utilized in order to include each of these starting points. In addition, November tax collections were also made available, so an annualized calculation using that starting point was also constructed.

← The three starting points: July, 1972, September, 1972, and December, 1972, provide an advantage in that any distortions which might be caused by large changes in revenues in one or two months of a particular year can be accounted for. In each of these cases, the data show that there have been declines in beer tax revenues, although, of course, the actual numbers do vary from each other.

<u>Year</u>		<u>Revenues</u>	<u>Dollar Change</u>	<u>Percent Change</u>
July	'72 - June '73	\$2,872,402		
July	'73 - June '74	2,592,619	-\$279,783	- 9.7
Sept.	'72 - Aug. '73	2,868,198		
Sept.	'73 - Aug. '74	2,534,768	-\$333,430	-11.6
Dec.	'72 - Nov. '73	2,803,079		
Dec.	'73 - Nov. '74	2,571,093	-\$231,986	- 8.3

Whichever starting point is used, the dollar decline which shows up amounts to well over \$200,000.

It is useful to compare the foregoing revenue trends with other tax yield trends in the State. Data were collected and compiled from revenue reports of the State Finance and Tax Departments for Wine, Income, Meals and Rooms, and Sales and Use. These taxes were selected because it is rather likely that their trends would ordinarily have a similar relation to consumer behavior as that regarding beer consumption. Here again, more than one set of comparisons was used: fiscal years 1972, 1973, and 1974; and December-November 1973 and 1974. The table below includes dollar amounts in thousands and percentage changes from one period to the next.

<u>Fiscal Year</u>	<u>Wine</u>	<u>Income</u>	<u>Meals, Rooms</u>	<u>Sales, Use</u>
1972	\$204.9	\$46,103	\$5,718	\$21,566
1973	222.8	49,748	6,140	25,465
1974	236.8	52,662	6,442	26,504
<u>% Change</u>				
1972-1973	+8.7	+7.9	+7.4	+18.1
1973-1974	+6.3	+5.9	+4.9	+ 4.1
<u>Dec. - Nov. (72-73)</u>	\$228.5	\$51,808	\$6,415	\$26,039
<u>Dec. - Nov. (73-74)</u>	243.3	53,397	6,732	26,948
	+6.5	+3.1	+4.9	+ 3.5

These data reveal that, in each case, revenues continued to increase in each period, even though the rate of increase was somewhat lower in a couple of instances. Beer revenues show up unfavorably in these comparisons.

Beer tax revenues represent changes in the volume of beer handled by Vermont distributors, and suggest that the volume declined perhaps 8% to more than 11%, depending on which measure is used. (Some brewers did not renew their licenses prior to the passage of the Deposit Law, presumably because of the Law's requirements. The disappearance of their products from the market could not account for these volume differentials, since their products appear to have accounted for about 3.1% of total volume in 1971, and 2.7% in 1972. The loss of revenue from their license fees is reported to be on the order of \$4,400 per year.) While there are no "hard" data available on actual retail and wholesale sales of beer in Vermont, available information permits estimates to be made. In 1973, the wholesale dollar volume of beer might have been on the order of \$26 million, while in 1974, it might likely have been near \$25 million. There are various indirect methods of estimating "retail" sales of beer. However, an effort was made to focus on the dollar volume of beer sales in retail grocery stores.* Brewing industry sources indicate that about 72% of beer sales are consumed "off premise," and since these are very largely grocery-type store sales, estimates of these have been prepared. Furthermore, grocery store sales of these packaged goods are intimately involved with the impact of the Deposit

✓ *(Parenthetically, it has to be noted that the volume of beer sold in kegs and barrels, rather than in bottles and cans, actually rose from 1973 to 1974.)

Container Law. As a result, there is a close connection between the dollar volume of grocery sales and the numbers of containers. The results of these estimations are as follows:

1970:	\$12.0 million
1971:	12.6 million
1972:	13.1 million
1973:	19.4 million
1974:	18.4 million.

It is necessary and useful to try to determine whether the foregoing economic trends in revenues and "sales" represent a pattern which has been repeated elsewhere, particularly in neighboring areas, or whether the Vermont experience is somewhat unique, or at least different. If Vermont's experience was similar or identical to sales trends in neighboring areas, then it could be considered to be but part of a larger, common trend. If that experience differed from those neighboring areas, it can reasonably be assumed that there were factors which were singularly applicable to the State, and which were not duplicated elsewhere, or which at least were not common to the region.

During the period which encompassed the preparation for, as well as the early application of, the Deposit Law, economic conditions in the State were generally good. Even so, there were floods, a gasoline crisis, and a poor winter for skiing--all of which affected the tourist trades. While the economic dimension of the tourist trade in Vermont is usually overblown in importance in public statements, it nevertheless does have

a tangible effect on the Vermont economy. That, combined with high inflation and a continually weakening economy, should have had some negative impact on sales of beer. Yet, it must be pointed out that New Hampshire and New York (at least the northern half of the latter state) also experienced a similar winter, a gasoline crisis, inflation, and worsening general economic conditions. It would therefore be reasonable to expect that beer sales in those areas would have followed a pattern similar to Vermont, at least so far as the general trends in sales would be concerned.

While complete comparisons among all these areas were not gathered, three important sets of data bearing on this question were analyzed. One set relates to sales of beer in New Hampshire for all of 1973 and for January through September, 1974; another, selected beer brand sales for a number of New York State border communities; and the third, sales of one major beer brand in border communities in New Hampshire.

The New York survey involved a number of beer brands for 1973 and for the first ten months of 1974. Since the same brands and retail outlets were used for both periods, the data are consistent. There were three general areas, containing the following communities: (1) Rouses Point, Essex, Willsboro, Plattsburgh, Port Henry, Crown Point, and Port Kent; (2) Whitehall, Hoosick Falls, Hampton, and Ticonderoga; (3) additional outlets in Hoosick Falls. The

volumes involved, in cases, for 1973 were: (1) 33,845; (2) 22,378; and (3) 3,723. It may be significant that in the more northerly areas (most of group 1), where Lake Champlain exerts a negative border influence, sales for the first ten months of 1974 represent almost 91% of all of 1973 sales. If the sales patterns in that area are similar to Vermont's (and it is probable that they are), we then can assume that about 13% of annual sales are represented by November and December. In that event, an increase in total sales over 1973 would be anticipated for the entire year. But even if that is not convincing, we can use comparable data for Vermont: one source of information indicated that beer tax revenues (which can be used as a proxy for sales, since it is a gallonage tax) in Vermont amounted to \$2,354,811, and for the first ten months of 1974 amounted to \$2,152,662. That means that, in Vermont, the volume of sales in 1974 was 78% of the 1973 total for the first ten months of 1974, compared to 91% in group 1 of New York communities.

In the more southerly areas of this New York State sample, where the borders are somewhat contiguous, ten-month sales totals were 59% above all of 1973. For the entire sample region, sales were 20.5% higher for the first ten months of 1974 than these had been in all of 1973. Yet, total New York State sales during these same ten months of 1974 were reported to be 2.2% above 1973 period levels.

While the New Hampshire border survey of only one, but a major, beer has limitations, it is still useful, and is probably indicative of general trends. The communities in which the sales took place include Charlestown, Hanover, Lebanon, Walpole, Clairmont, Hinsdale, and some smaller communities. In 1973, sales in the New Hampshire outlets accounted for, amounted to over 84,000 cases. For the first eleven months of 1974 these same outlets recorded sales which were 47% higher than all of 1973. These totals do not include some new outlets, established in 1974, which accounted for some 14,000 additional cases in sales for their operations through November.

Finally in this connection, data obtained from the New Hampshire State Liquor Commission relating to sales in 1973 and January through September, 1974, could be compared to Vermont's experience. In Vermont's case, tax revenues indicate that the January-September receipts represented 68% of all of 1973 revenues. On the other hand, New Hampshire Commission data indicate that in this same period sales were 109% of 1973 sales in total.

It is true that New Hampshire beer prices have always been lower than Vermont's, at least partly because of legal requirements, and it is probably true for New York as well. Beer prices did not decline in New Hampshire during this period.

The possibility that beer purchases along the borders of New Hampshire and New York increased because prices there declined, then, is removed. It will be illustrated on subsequent

pages that those New Hampshire-New York beer prices did become lower relative to Vermont beer prices, and it is apparent that some of those sales increases in those border areas were attributable to Vermonsters' increased purchases across those borders.

One other influence which must be taken into account is the possibility that personal income ~~in~~^{in New} Vermont was lowered, stayed the same, or grew slowly, while income in neighboring states grew faster than in Vermont. Since personal income in particular communities is not available, we have to assume that there is some correlation between general personal income trends in the entire states involved and their border communities which were identified in two of the surveys reported on. If, then, personal income grew faster in New Hampshire and New York than it did in Vermont, or even if such income declined in Vermont, it could account for a large part of the decline in beer sales.

Unfortunately, complete data are not available, but what is available is important. In terms of annual information, the most recent data cover only 1973, of course. Federal reports indicate the following changes, in percent, from 1972 to 1973:

	<u>Per Capita Income</u>	<u>Total Personal Income</u>
Vermont	+9.5	+10.4
New Hampshire	+9.7	+12.1
New York	+8.2	+ 7.5

These data should indicate that beer sales in Vermont, if they are related to consumption expenditures (and, of course, they

are), should have had a rate of increase slightly below New Hampshire's, and slightly above New York's. In addition, there are available data relating to total personal income changes, by quarters, for 1973 and the first two quarters of 1974. These were reported as percentage changes from the second quarter of 1973 to the second quarter of 1974; the fourth quarter of 1973 to the second quarter of 1974; and the first to the second quarter of 1974. These appear as follows:

	<u>II '73 - II '74</u>	<u>IV '73 - II '74</u>	<u>I '74 - II '74</u>
Vermont	+13.4	+7.0	+5.6
New Hampshire	+12.0	+5.7	+3.5
New York	+ 9.0	+4.5	+2.5

It is theoretically feasible that per capita calculations might alter those rates of change among these states, but it is not highly likely. The fact is that beer sales in Vermont moved downward, while such sales rose in the other two states. In this correlation which utilizes income, there should have been definite increases in beer sales in Vermont. *not of beer is an inferior good.*

Another factor which requires some attention, and which has been very briefly alluded to above, is that of the price of beer. It is a common expectation that if income remains the same, and the price of a product rises, then there would likely be some reduction in the amount of that product which would be purchased. We also know that total personal income in Vermont, at least through the first half of 1974 (the latest data which are available), increased. However, it is also true that the prices of virtually all commodities rose at this time, not only in Vermont but everywhere. While the price of beer

might have risen in this period accordingly, it simply had to rise as a result of the Deposit Law. For one, the Law arranged for the payment of 1¢ per container by the distributor to the retailer for the return of each container. For another, special labeling was required, either on a paper label or on the container itself, and that, too, involved an additional cost. Additional handling and storage ~~would~~ increase the costs experienced by distributors and retailers under a mandated returnable deposit system. Even if all of the additional costs which could be anticipated (and perhaps some which were experienced after the Law went into effect) were not passed on to the consumer, it would have been unrealistic to assume that none of these costs would have been passed on. What cannot be determined is whether the consumer, himself, considers that the price of beer "increased" by 5¢ per bottle, or 30¢ a six-pack--even though he has the option of redeeming containers for refunds. If he deducted the deposit from the price he paid, the increase in that price would be less than if he simply considered the price to be the total amount of money he paid. In the latter instance, the increase would likely have had a greater impact upon his decision to purchase the beer than if the "price" was considered to be the amount stated, less that 5¢ or 30¢. Even so, it is very important to note that Vermont law prohibits retailers from selling beer below the wholesale price--which is not true in New Hampshire, and probably not so in New York either. Thus it would be expected that the retail

price would rise at least as much as the wholesale price. From the available data (some of which is somewhat difficult to organize, because of the kinds of reporting and tabulation systems used), it appears that that is so. A survey which was conducted last year which included usable data from about seventy retail stores in the State, indicated that the average retail price of a six-pack of beer was \$1.45 during the three months prior to the imposition of the deposit requirements, and an average price of \$1.94 in September, 1973, the first month under the Law. If the deposit is included in the calculations, the average price increased almost 34%; excluding the deposit, the average price increased by about 13%--by 19¢, or a little over 3¢ per container. It appears that just prior to the imposition of the deposit requirements, the wholesale prices of the leading brands of beer (which brands account for some three-quarters of the beer sales volume in Vermont) were increased around 11% to 12%. Since that time, the prices of beers have changed and are now generally higher than they were a year ago.

While there may be arguments about whether the total amounts of the price increases were "justified," some price increases were bound to occur. Since last year, the prices of containers, for example, have risen, and that alone has maintained an upward pressure on beer prices at the brewery level. Wholesale and retail price increases which are referred to in this report include large proportions which are directly attributable to the Deposit Law, which, in turn, were unique to Vermont and not duplicated in neighboring states.

SOFT DRINKS

Information relating to soft drink sales is much scarcer and sparser than data about beer, for many reasons. For one, soft drinks are not taxed directly, as is beer, hence there are no governmental agencies which might serve as information collection centers for this information. Second, there is no trade association in the State similar to the one which deals with beer which performs the function of regularly collecting these data. While there are marketing research firms which do collect and compile such information, these are ordinarily done under contract with particular firms, and the information is considered to be confidential.

As a result of the aforementioned deficiencies, the research done here has had to rely upon a rather limited and sketchy survey, which included a few retailers and a few distributors and bottlers. In addition, some other data, compiled a year ago, were also utilized in this connection.

For a rather extensive period of time, even after the Deposit Law went into effect, the "wholesale" price of soft drinks changed very slightly; since the spring of 1974, there have been important increases due mostly to the increased price of sugar--and therefore the syrup(s) used, but also due to the prices of the containers of soft drinks. Therefore, any estimates of the patterns of sales which took place between 1973 and 1974 in Vermont would reflect conditions which, in at least one important respect, were different from those which influenced beer sales. There are other factors which enter the picture, but these will be dealt with subsequently.

Unfortunately, there is not presently available any published estimates of the dollar volume of soft drink sales, either at wholesale or retail, for Vermont. As a result, independent estimates of the dollar values of retail soft drink sales were prepared for this study, and will be presented below.

It can be noted first, however, that a leading national research corporation did make available some comparisons which it prepared for Vermont and New England, relating to a specific size of soft drink container sold in food stores. Their data for Vermont, however, only began, on a bi-monthly basis, in June-July of 1973, so that annual comparisons of trends were not possible. While these data are not conclusive, therefore, they do indicate that such sales in June-July, 1974, were 27% below the same period in 1973; for August-September, 1974, such sales were 13% below the same 1973 period; and for October-November, 1974, these were more than 2% lower. For New England, excluding Vermont, the June-July sales were over 3% below the previous year; the August-September period was about 10% lower; and the October-November period was almost 7% below the previous year. It is obvious that soft drink sales have been declining throughout New England, in some fashion, but, given the sparse data available, it is probable that such sales in Vermont declined more rapidly than the rest of the region during 1974.

The independently prepared estimates of the dollar volume of retail soft drink sales indicate that these increased annually from 1970 on, with a sizable increase from 1972 to 1973:

<u>Retail Sales</u>			
1970	\$12.9 million	1972	\$13.9 million
1971	\$13.5 million	1973	\$16.3 million

As for 1974, estimates of sales range from a decline of 5% to 25%, and it is, of course, difficult to pinpoint some "average" sales decline. The reason is that information has come from distributors, bottlers, and retail stores, and each has its own methods of calculation. Distributors and bottlers have reported that dollar sales volumes are down from last year by "slightly" or by 10% or 10-1/2%; some retailers report 20% to 25% declines. Not one source indicated that sales were equal to, or better than, the sales in 1973. One major chain location manager indicated that sales in November had "come back" to last year's level, but that sales in the spring and summer were "disastrous." It is also important to note that some chain grocery stores were unable to obtain their own brands of soft drinks for a period of time during last fall and winter, and these brands probably constituted a larger portion of the soft drink market than the beer brands which were discontinued constituted of the beer market. At any rate, it appears fair to assume that soft drink sales did, indeed, decline from 1973 to 1974, and that 10% is a reasonable minimum which can be used. If that is so, the estimates of 1973 sales suggest that retail sales may well have declined by about \$1.5 million. What effect this decline had on tax revenues cannot be determined now, since business income taxes are influenced not only by gross income, but by net income, which does include costs. There can be no question that declines in gross incomes of businesses which stem from soft drink sales quite clearly did not result in any increases in tax revenues paid, even

though it is conceivable that there might have been no declines in business income taxes paid as a result. Furthermore, since sales taxes would reflect soft drink sales, declines in that sector would not have contributed to any increases in sales tax receipts. Some other aspects of soft drink sales, and related factors, will be referred to subsequently.

At this point, it is important to be aware of the fact that, as is the case with beer sales, we do not know how the consumer conceives of the price increases which took place for soft drinks. Again, if the consumer saw (or sees) the "price" of soft drinks increasing by the amount of the deposit and the handling and other charges, he considered (and considers) that the price of his soft drinks increased by a very large amount. If, on the other hand, he has deducted the deposit amount because he intends to return his container, the effect of the "price increase" is greatly modified. Whatever may be the result of such calculations, it appears to be logical that the consumer in Vermont has reduced somewhat his purchases of soft drinks, and at least part of the cause of this decline has to be attributed to the increase in price which followed the application of the Container Deposit Law.

It is usually assumed that it is the consumer who ultimately pays the bulk, if not all, of the costs of a system which turns on the sales of goods or services. That is because producers of these goods and services attempt to pass on as much of any additional costs which they experience, in order to maintain or enhance the profitability of their businesses. While we do not have any specific information about all the costs of the deposit-return system, and do not know specifically how business revenues and profits have fared, we do have some approximations of the prices which consumers have paid for beer and soft drinks, which may be indicative of at least most of the cost of operating this system. (Many of these factors are analyzed in subsequent sections.)

If we use the survey of retailers which was conducted in 1973 as our model (see p. 16), it appears that the base price of a six-pack of beer rose from \$1.45 to \$1.64 when the Deposit Law went into effect. Obviously, there were variations among large and small stores, since such pricing may vary, within limits. However, a 19¢ per-six-pack increase does appear to have been a fairly widespread change. While there were some alterations in prices between September, 1973, and the fall of 1974, prices appear to be pretty close to what they were in the fall of 1973. Whatever the case, the 19¢ increase is usable as a basis for calculation. Since beer is sold on tap and in 32 ounce, 12 ounce, and other-size containers, not all of the value of beer sales is attributable to the "six-pack," although the bulk of such sales is concentrated here.

Rough calculations and estimates suggest that in 1973 there might have been some 17.5 million six-packs of beer sold by all Vermont retailers (including grocers), and approximately 15.5 million sold in 1974. These would represent sales of \$25.3 million and \$25.4 million for the respective years, at the prices identified above. Thus while total consumer expenditures for this beer increased slightly (by 0.4%), that additional amount purchased about 11% less beer--perhaps even less than that.

There is also the fact that if there were actually 15.5 million beer six-packs purchased by consumers, they paid \$4,665,000 in deposits. If their return rate was 90%, they redeemed \$4,198,500, and thus actually paid an additional \$466,500 for that beer. To be sure, the calculation of a "deposit gap" does not mean that consumers necessarily saw that amount as a particularly excessive cost, since they could believe that it was worth foregoing the redemption of their deposit, rather than expending the effort to do so. Nevertheless, from a financial and cost point of view, that \$466,500 must be calculated as part of the actual cost of, or expenditure for, beer.

As for soft drinks, the basic price rose on a comparative annual basis, a large part of which was due to the increased prices of sugar and containers, and a smaller part attributable to the Deposit Law. While less information is available about the volume and pricing of soft drinks than is known about beer,

the estimates and assumptions used are that there were about 56.9 million containers sold in 1974 (see p. 19). It is further estimated that consumers paid out about 10% less for soft drinks, but received 16% to 18% less of the product, so far as quantity estimates are concerned. In addition, previous estimates, based upon a 90% return rate, suggested that the consumers may have paid more than \$2.8 million in deposits, and received about \$2.6 million for redeeming the containers. Therefore, an additional \$284,500 must be added to the total expenditures for soft drinks.

While it is very obvious that the prices which the consumers pay for beer and soft drinks have risen, we cannot presently be certain precisely what part of those price increases are directly attributable to the Container Deposit Law. There is no question that the system increased costs for the distributor group and the retailer; that the fact that a 100% return rate would not be achieved meant that the effective prices of these commodities would be higher (the "deposit gap"); and that at least some of the increased costs would be passed on to the consumer. We have no way of knowing what the actual costs to the business units have been, nor how much was actually passed on. Nevertheless, the evidence clearly indicates that the deposit-return system has caused "legitimate" price increases for the retailer, wholesaler and bottler.

Finally, it might be useful to point out, in connection with the subject of consumer prices, that State law prohibits the retail price of beer from falling below its wholesale price.

All things being equal, that would account for at least some differentials in prices for beer in New Hampshire, and probably New York, since merchants there do offer reduced prices, "bonuses," and the like. How much this particular law has affected the actual retail pricing policies of retailers in Vermont is not known, but it does have the effect of propping the price of that commodity in Vermont.

APPENDIX F

CASE HISTORIES OF HUMAN AND ANIMAL HEALTH HAZARDS ASSOCIATED WITH BEVERAGE CONTAINERS

A. Human Hazards: Pull-Tab Aspiration and Ingestion

The following cases illustrate the hazards of pull-tabs to humans:

- Case 1: A 21 year old man drinking beer with friends swallowed the pull-tab he dropped into the can. At the hospital emergency room, where the man complained of severe chest pains, the x-rays showed clear lungs and a normal cardiac silhouette. The pull-tab was identified in the midesophagus region and extracted by esophagoscopy. Esophagoscope revealed no perforation but ragged mucosal tears.¹
- Case 2: A 5 year old boy was brought to the hospital after swallowing a portion of a pull-tab which had broken into two portions before being dropped into a soda can. X-rays showed the tab barely visible in the abdomen. Four days later, a subsequent x-ray revealed no foreign body so presumably the tab was passed.²
- Case 3: A 22 year old man suffering from chest pains two days after being pinned between a forklift truck and a wooden rack was admitted to the hospital. An initial chest x-ray revealed hyperaeration of the left lung. A lung scan showed a decrease perfusion in the left lung. A repeat x-ray showed obstructive

emphysema of the left lung. A bronchogram showed no bronchial tree to the left main stem bronchus. A left thoracotomy found an abundance of enlarged hilar lymph nodes and a bronchotomy revealed a foreign body - the angular portion of a pull-tab which had inadvertently and unknowingly been aspirated by the man approximately two years previously while drinking copious amounts of beer in Vietnam.³

Case 4: A 13 month old boy, after two weeks of being unable to eat solids and several hours of not being able to swallow his saliva, was taken to his pediatrician who took a chest x-ray which revealed a column of food and air bubbles from the aortic arch up. An esophagoscopy removed a large amount of food lying on top of the metal strip from a pop-top. The pop-top itself was removed and fortunately only laceration had occurred, not perforation.⁴

Case 5: An 11 month old boy with a high fever, difficult respiration and inability to swallow was admitted to the hospital in grave condition. A chest x-ray showed mediastinal widening and fluid in the hemithorax. Aspirated fluid showed blood. After 12 hours drainage of the chest and rehydration, the boy was still no better. A barium swallow showed enlargement of the esophagus. A thoracotomy showed an abscess cavity with a free floating pop-top. The esophageal perforation was sutured and chest tubes were inserted. A gastrostomy and sump catheter were also inserted. Tubes were removed on the 9th and 14th days. But subsequent strictures of the esophagus required dilations. The gastrostomy tube was finally removed nine months later.⁵

- Case 6: A 4 month old infant with a hacking cough and wheezing was x-rayed for croup but symptoms could not be verified. His condition worsened and a laryngoscopy found a rolled up portion of a pull-tab wedged between the infants vocal cords. Forceps removed the tab and forty-eight hours later the child was breathing with no difficulty.⁶
- Case 7: A 2 year old boy with a year's difficulty in swallowing had had several barium swallow examinations which showed nothing. Further examination by fluoroscopy showed the esophagus swollen. An exploratory operation found a large abscess in which a pull-tab was lodged and surrounded by pus and food. Sutures were required to close the perforation and tubes were inserted for drainage. Strictures had to be dialated several times. The child finally remained asymptomatic.⁷
- Case 8: An 11 month old boy was admitted to a hospital for coughing and cyanosis. Chest x-rays revealed nothing. He was placed in a mist and given postural drainage and bronchial dialators without any relief. The next day a bronchoscopy removed the metal tab of a pull-tab.⁸
- Case 9: A 13 month old girl unable to swallow her saliva was given a chest x-ray which showed complete obstruction of the esophagus at the aortic arch. An esophagoscopy removed a large amount of old food but couldn't get through the constricted esophagus. A bronchoscope revealed a metalic object. The next day the endoscopy was repeated and the object was removed without apparent perforation. A subsequent stricture had to be dialated several weeks later and after three months whe finally returned to normal.⁹

Case 10: An 11 month old boy over a period of ten days had been seen at several emergency rooms because of noisy breathing and an inability to swallow. Many chest x-rays were taken and all interpreted as normal. Six hours after admission he required transfusions and intensive care. He began vomiting large amounts of blood and his abdomen distended. In the operating room rapid exploration of the stomach showed blood welling up from the esophagus. A sterile proctoscope showed blood gushing down the esophagus. An esophagoscopy and thoracotomy did not help. The bleeding could not be controlled and the patient after repeatedly being resuscitated finally died. A post mortum showed deep ulceration in the esophagus that conformed to that of a pull-top tab and perforation in the aortic arch region. The object had presumably eroded through the aorta. Retrospective reviews of the x-rays showed that the metallic object behind the esophagus conformed in outline to a pull-tab.¹⁰

B. Animal Hazards

The following cases illustrate the hazards of the flip-top, pull-tab and plastic binders of "convenience" containers to animals:

Case 1: In Florida a big brown pelican, a candidate for the endangered species list, dove for a fish that turned out to be a plastic six-pack binder which looped over his bill and about his neck. Clawing at it, his foot became entangled and he died.¹¹

Case 2: A Michigan Canada goose was ostracized and abandoned by other geese because of the bizarre six-pack binder trapped about his neck.¹²

Case 3: A Washington, DC cardinal was found dead with a pull-tab ring jammed over its face and eyes.¹³

Case 4: Michigan and California biologists have observed fingerling trout girdled by pull-tab rings. As the fish grow, the rings start to cut the bodies in half.¹⁴

Case 5: Sportfishermen have discovered pull-tabs in the stomachs of "strike" fish such as trout and salmon.¹⁵

Case 6: In Oregon, fifty dead hatchling trout were found by a Game Commission biologist inside a submerged beer can found in the Rogue River.¹⁶

Case 7: Also in Oregon, a three pound rainbow trout was found wedged into a broken beer bottle.¹⁷

Case 8: A Michigan fisherman caught a 21" pike which was slowly being decapitated by a plastic sic-pack binder.¹⁸

APPENDIX F

Footnotes

1. Lee F. Rogers, M.D., John P. Igin, M.D., "Beverage Can Pull-Tabs", from The Journal of the American Medical Association, Vol. 233 (July 28, 1975), p. 345.
2. Ibid., pp. 345-46.
3. Ibid., pp. 346-48.
4. Burrington, M.D., "Aluminum Pop-Tops, A Hazard to Child Health", from The Journal of the American Medical Association, Vol. 235 (June 14, 1976), p. 2614.
5. Ibid., p. 2614.
6. Ibid., p. 2614-15.
7. Ibid., p. 2615.
8. Ibid.
9. Ibid.
10. Ibid., pp. 2615-16.
11. Penny Ward, "Deadly Throwaways", a booklet reprinted from Defenders of Wildlife magazine, 1975, p. 1.
12. Ibid., p. 2.
13. Ibid.
14. Ibid., p. 3.
15. Ibid.
16. Ibid., p. 4.
17. Ibid.
18. Ibid.